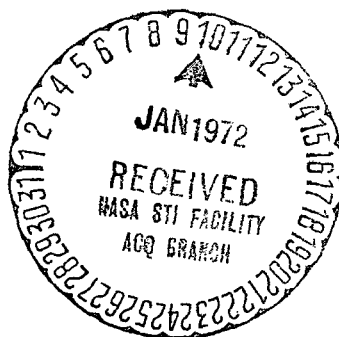


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MSC INTERNAL NOTE NO. 71-FM-216

SKYLAB PROGRAM

SKYLAB 4 PRELIMINARY REFERENCE EARTH RESOURCES
EXPERIMENT PACKAGE (EREP) PASS PLANNING DOCUMENT
VOLUME II - EREP SITES AND S190 SWATH STUDY
OF SELECTED REVS

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June 3, 1971

MISSION PLANNING AND ANALYSIS DIVISION
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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SUMMARY

The purpose of this document is to present groundtracks with S190 swaths of selected revs (revolutions) as they pass over areas containing EREP (Earth Resources Experiment Package) sites. This document is the second of three volumes needed to determine which revs to be used for EREP passes.

These data are based on an SL-1 launch at Greenwich mean time of $17^h 30^m 0.00^s$ on April 30, 1973.

A copy of the enclosed data was forwarded to the Science Mission Support Division on May 28, 1971, for further evaluation.

INTRODUCTION

This document presents detailed study of groundtracks and S190 swaths of revs that are of further interest in EREP site evaluation. By evaluating the SL-4 groundtracks (ref. 1) the revs to be further studied have been greatly reduced and are presented in this report. The evaluation of these data are conducted by the Science Mission Support Division as part of the EREP pass planning team (ref. 2).

Some EREP passes can be determined from the enclosed data, but in some cases a more detailed study is needed. Volume III will present a detailed graphical study of certain small areas of interest as well as digital data needed for the final evaluation of EREP passes.

Table I lists all EREP sites, their experiment number, and their location as of the freeze data of April 15, 1971 (ref. 3). These sites

will not change for the duration of the SL-2, SL-3, and SL-4 study. These studies will take approximately 2 months.

The eight EREP disciplines are combined into three sets of disciplines. Reference 4 shows the disciplines individually.

All rev numbers appearing in this report are referenced to the SL-1 launch. The SL-4 will be launched 2669 revs after the SL-1 launch, and deorbit occurs on rev 3481 (ref. 5).

EREP SITES

All currently defined EREP sites are shown in this report. The eight EREP disciplines have been combined into three groups of EREP disciplines. Some of the EREP sites appear in more than one group depending on their experiment purpose.

The eight EREP disciplines are as follows:

- a. E - sensor performance evaluation
- b. F - forestry
- c. G - geology
- d. H - hydrology
- e. L - land use mapping
- f. O - oceanography
- g. P - pollution
- h. W - atmospheric science (weather)

These eight disciplines are combined into three discipline groups as follows:

- a. F and E
- b. G, H, and O
- c. L, P, and W

Figures 1, 2, and 3 show the location of these sites on world and U. S. maps. Figure 4 shows all the EREP sites that appear in two congested

areas - Houston and New York-Baltimore. The standard numbering system to identify EREP sites has been used on these plots. To identify the sites, the reader should refer to table I.

Figure 5 shows the S190 through S194 sensor fields of view.

DISCUSSION OF DATA

Immediately following figure 5 are all data needed to further evaluate the SL-4 revs for EREP passes. Since these plots are computer generated and numerous, they have not been given a figure number.

The groundtracks and S190 swaths are shown on maps containing EREP sites. The data on the plots can readily be identified by the information contained above each plot. The rev number(s) and discipline group are printed as part of this information. The rev always starts at 80° west longitude.

Most of this data consists of passes over the continental United States. However, a few groundtracks and S190 swaths are shown over other parts of the world. The S190 is the only sensor swath shown in this report. The S190 is a 6-channel high precision 70 mm camera facility. The lenses will have a focal length of 6 inches, providing an approximate 88- by 88-n. mi. square surface coverage from a 235-n. mi. orbit.

The reader can readily identify data shown on all of these plots by looking at the longitude-latitude band. Then, by looking at figures 1 through 3, depending on the EREP group required and by consulting table I, each EREP site can be identified.

CONCLUSIONS

The enclosed data are second of three parts in a series needed to determine the SL-4 revs to be used for EREP passes. By evaluating the enclosed data, the revs to be considered will be further reduced.

TABLE I.- PRELIMINARY EARTH RESOURCES EXPERIMENT

PACKAGE TEST SITES AS OF MAY 1971

Test site no.	Test site name	Coordinates	Experiment no.	Test site no.	Test site name	Coordinates	Experiment no.
011	Chesapeake Bay MDTs	3920N - 7750W 3940N - 7600W 3630N - 7430W 3600N - 7620W	E - 4 O - 1	052	Imperial Valley, California	3310N - 11550W 3230N - 11515W	E - 4 E - 6 E - 7
012	Greater Washington	3910N - 7720W 3838N - 7645W	E - 4	053	Oregon Coast	4622N - 12530W 4622N - 12430W 4600N - 12430W 4600N - 12345W 4220N - 12345W 4220N - 12530W	O - 1
013	Greater Baltimore	3936N - 7645W 3900N - 7620W	E - 4	054	Atlanta	3357N - 8532W 3253N - 8404W	E - 4 F - 1
014	Upper Chesapeake Bay	3900N - 7645W 3900N - 7620W 3936N - 7620W 3936N - 7600W 3800N - 7645W	E - 4	055	Gulf Coast	2750N - 9755W 3010N - 9430W 2935N - 9400W 2730N - 9715W 2615N - 9710W 2615N - 9750W	O - 1
022	Phoenix	3342N - 11250W 3312N - 11130W	E - 4 E - 6	056	Mississippi Delta	2930N - 9030W 2830N - 8930W	O - 1 E - 4 E - 6
023	Wilcox Playa	3214N - 11000W 3203N - 10943W	G - 1	059	Wind River, Washington (Site 1/4 mile square)	4543N - 12154W 5 n. mi. radius	F - 1
024	Copper Area, Arizona	3145N - 11050W 15 n. mi. radius	G - 1	060	Westlaco, Texas	2609N - 9757W 10 n. mi. radius	E - 7
031	Houston MDTs	3100N - 9700W 3140N - 9450W 2900N - 9405W 2800N - 9610W	E - 6 L - 1	061	Bonanza, Colorado	3835N - 10645W 3845N - 10615W 3810N - 10540W 3750N - 10615W	E - 7 G - 1
032	Greater Houston	3000N - 9537W 2933N - 9506W	P - 2 E - 4	062	White Sands, N.M. Lava Beds	3355N - 10700W 3315N - 10550W	E - 6 E - 7
033	Galveston Bay	2945N - 9500W 2920N - 9440W	E - 4 L - 3 P - 2	063	White Sands, N.M. Desert	3305N - 10630W 3240N - 10610W	E - 6 E - 7 L - 3 G - 1
034	Houston Ship Channel	2946N - 9518W 2938N - 9455W	E - 4	064	Lava Beds, California	4140N - 12130W 15 n. mi. radius	G - 1 E - 6
035	Houston Intercontinental A/P	3000N - 9521W 2957N - 9518W	E - 6	065	San Antonio-Uvalde, Texas	2900N - 9700W 3100N - 10000W	L - 1
036	Jones State Forest	3030N - 9545W 2945N - 9500W	F - 1	066	Buccancer Tower	2850N - 9449W 2 n. mi. radius	L - 3
037	Sam Houston State Park	3043N - 9550W 3020N - 9500W	E - 6	067	Great Barrier Reef, Aust.	920S - 14340E 920S - 14420E 1330S - 11420E 1440S - 14550E 1600S - 14550E 1450S - 14525E 1330S - 14340E	O - 1 O - 3
038	Big Thicket, Texas	3130N - 9530W 3020N - 9400W	E - 6	068	Lake Michigan	4600N - 8800W 4130N - 8500W	E - 6
041	Southern Florida MDTs	2900N - 8300W 2900N - 8000W 2400N - 7930W 2400N - 8220W	L - 1				
042	Everglades, Florida	2544N - 8126W 2510N - 8023W	E - 7 O - 3				
051	Salton Sea, California	3340N - 11620W 3340N - 11545W 3310N - 11515W 3310N - 11550W	E - 6 E - 7				

TABLE I.- PRELIMINARY EARTH RESOURCES EXPERIMENT

PACKAGE TEST SITES AS OF MAY 1971 - Continued

Test site no.	Test site name	Coordinates	Experiment no.	Test site no.	Test site name	Coordinates	Experiment no.
069	Lake Superior	4806N - 8706W 4718N - 8618W	E - 7 O - 5	088	Los Angeles, California	3420N - 11900W 3330N - 11800W	P - 2 E - 4
070	Great Salt Lake, Utah	4130N - 11300W 4000N - 11400W	L - 3 E - 2 E - 6	089	Lake Erie	4200N - 8300W 4200N - 8200W 4130N - 8200W 4230N - 8300W	P - 2 E - 4 E - 6
071	Crater Lake, Oregon	4259N - 12210W 4254N - 12202W	E - 6	090	Gulf Stream (Eastern U.S. Coast)	4200N - 7000W 4000N - 6300W 2400N - 7600W 2800N - 8200W	O - 1 E - 6
072	Painted Desert	3510N - 11000W 3438N - 10940W	E - 6	091	Kuroshio Current, Japan	2405N - 12700E 3500N - 14200E 3200N - 14200E 1700N - 12700E	O - 1
073	North Dakota-Montana Area	5000N - 10500W 4000N - 9800W	L - 4	092	Bahamas	2600N - 8000W 2800N - 7800W 2200N - 7000W 2000N - 7000W	O - 1
074	Australia to North Cape	2700S - 12000E 2200S - 11200E	L - 4	093	Columbia River	4620N - 12410W 4605N - 12330W	O - 1
075	Argentina Pampas	3800S - 6300W 3000S - 5700W	L - 4	094	California Coast	4200N - 12700W 4200N - 12300W 3300N - 11600W 3200N - 12200W	O - 1
076	Padre Island, Texas	2700N - 9735W 2800N - 9700W 2700N - 9710W 2600N - 9710W	E - 6 E - 7	095	Bermuda	3230N - 6500W 3210N - 6430W	O - 1
077	N. Carolina Not. Seashore	3520N - 7550W 3410N - 7500W	E - 7	096	Southwest U.S.	4000N - 1300W 3000N - 1100W	L - 2
078	North Atlantic	5000N - 4000W 4000N - 2000W	O - 2	097	Midwest U.S.	4500N - 11000W 3000N - 9000W	L - 2 E - 7
079	Lake Livingston, Texas	3057N - 9456W 3037N - 9334W	E - 7	098	North Central U.S.	5000N - 10000W 4000N - 8000W	L - 2
080	Nile Delta	3230N - 3230E 3000N - 3000E	E - 7	099	Buffalo Area	4300N - 7900W 4200N - 7700W	L - 2
081	Okefenokee Swamp, Georgia	3130N - 8252W 3052N - 8106W 2957N - 8220W 3051N - 8314W	O - 3	100	Texas - Gulf Area	3500N - 10000W 2500N - 9000W	L - 2
082	Boston	4234N - 7130W 4210N - 7050W	E - 4	101	Inter Texas - Gulf Area	3500N - 9800W 2500N - 9200W	L - 2
083	Saragosso Sea	3700N - 7600W 2200N - 4000W	O - 3	102	Panhandle Area	4000N - 10400W 3500N - 9600W	L - 2
084	Tahiti (Lagoons and Atolls)	1800S - 15000W 1720S - 14900W	O - 1 O - 3	103	Inter North Central U.S.	5000N - 9500W 4000N - 9000W	L - 2
085	Hawaii	2215N - 16030W 2215N - 15900W 2000N - 15400W 1840N - 15500W	O - 3	104	Upper Mississippi River Area	4500N - 9400W 4000N - 9000W	L - 2
086	Japanese Coast	4500N - 14200E 4200N - 14900E 2800N - 13300E 3300N - 12700E	O - 3				
087	Peru Coast	800S - 7914W 800S - 7840W 1050S - 7715W 1050S - 7800W	O - 3				

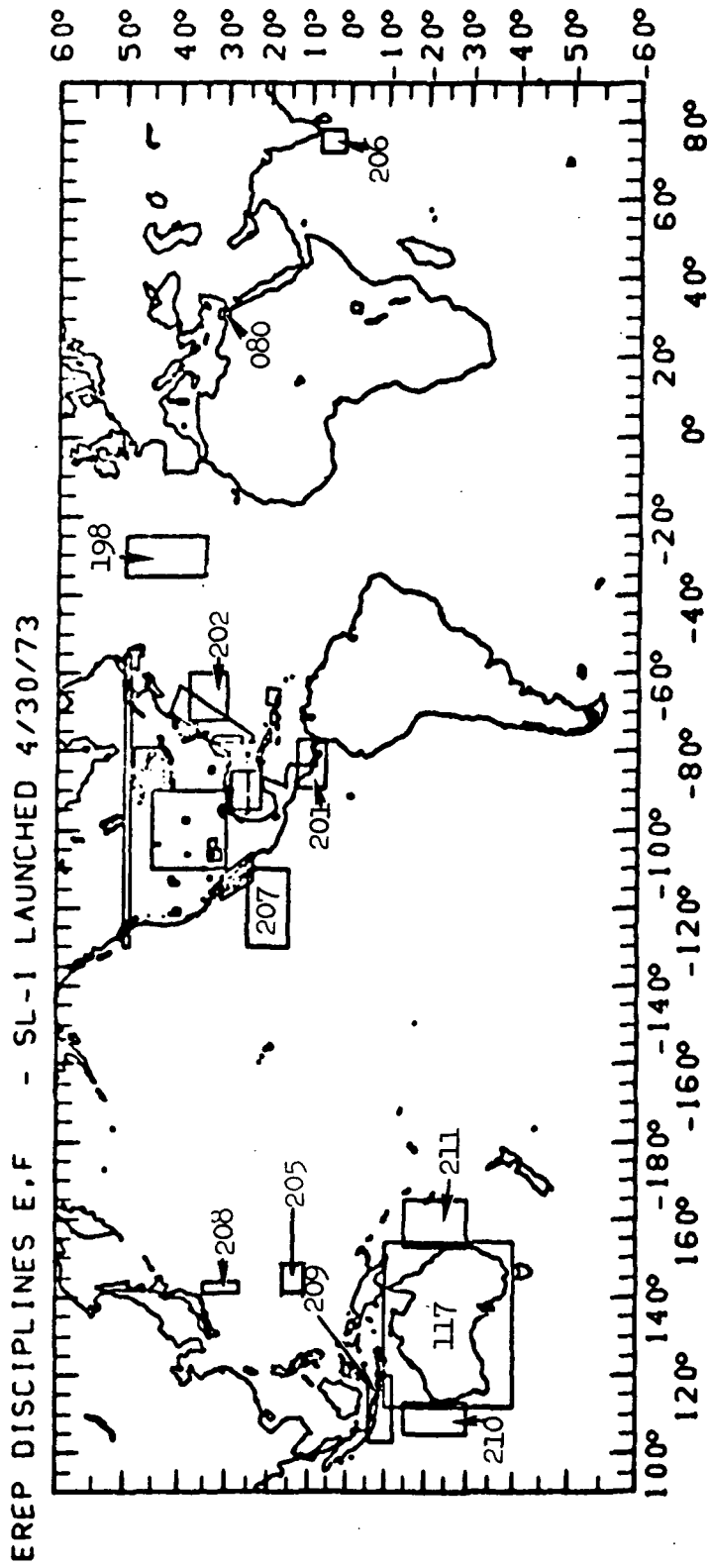
TABLE I.- PRELIMINARY EARTH RESOURCES EXPERIMENT
PACKAGE TEST SITES AS OF MAY 1971 - Continued

Test site no.	Test site name	Coordinates	Experiment no.	Test site no.	Test site name	Coordinates	Experiment no.
107	Atlantic	4400N - 4100W 4500N - 1600W 3500N - 4800W 3800N - 7100W	O - 4	125	Indonesia October - March	500S - 1600E 2000S - 1200E 1000N - 900E 200N - 1350E	W - 1
108	Central Gulf of Mexico	2900N - 9600W 2500N - 8500W	E - 2 O - 2 L - 2 L - 3	126	Air Sea Interface - Net Flux of water	2500N - 7500W 2500N - 2800W 0 - 700W 0 - 5500W	W - 2
109	Midwestern Atlantic	4000N - 7000W 2000N - 5000W	L - 2 O - 2	127	Cornbelt	4000N - 8600W 4200N - 9000W	L - 1
110	Central U.S.	5000N - 10000W 3500N - 9000W	L - 2 H - 1	128	Black Hills, S.D.	4430N - 10400W 4345N - 10330W	F - 1
111	Baja Land/Sea Interface	3100N - 11800W 3100N - 11200W 2400N - 10600W 2400N - 11300W	E - 5	129	North Island, New Zealand	4130S - 17700E 3730S - 17400E	L - 4
112	Florida-Land/Sea Interface	2930N - 8400W 2930N - 8000W 2530N - 7900W 2530N - 8300W	E - 5	130	Central Madagascar	2500S - 4800E 1500S - 4300E	L - 4
113	Victoria Desert, Australia	2700S - 1350E 2000S - 1230E	L - 4	131	Western U.S.	4500N - 11000W 3700N - 10500W	L - 4
114	Michigan-Copper Country	4600N - 8800W 50 n. mi. radius	G - 1	132	Andes Mnts.	1200S - 7900W 0 - 7500W	L - 4
115	Southern Arizona	3100N - 11000W 3400N - 11300W	L - 1	133	Newfoundland	5000N - 5900W 4600N - 5300W	L - 4
116	Colorado Molybdenum Mines	3914N - 10618W 20 n. mi. radius	G - 1	134	West U.S. and Mexico	4300N - 11800W 3000N - 11000W	L - 4
117	Australia	4000S - 1540E 1000S - 1120E	E - 7	135	N. Hardwood Biome	4800N - 7630W 4200N - 6830W	L - 4
118	Canada	5000N - 13000W 4900N - 5500W	E - 7	136	Bucks Lake, California	4050N - 12137W 3937N - 12003W	F - 1
119	Beta Network April - June	3542N - 9811W 3500N - 9723W	W - 1	137	Palaloapan, Mexico	1910N - 9610W 1830N - 9730W 1730N - 9640W 1845N - 9510W	F - 1
120	Central U.S. April - June	4000N - 10400W 3400N - 9600W	W - 1	138	Copper Area, Utah	4033N - 11209W 15 n. mi. radius	G - 1
121	Indonesia April - September	1500N - 1050E 900S - 1100E 0 - 9100E	W - 1	141	Tri-State Lead and Zinc Okla., Mo., Kan.	3615N - 9600W 130 n. mi. radius	G - 1
122	Africa April - September	1000N - 3000E 1000S - 2000E 700N - 700E	W - 1	142	Lake of the Woods, Ont. (Canada to St. Louis)	4920N - 9450W 3839N - 9015W	H - 2
123	South America October - March	2000S - 6500W 500S - 4500W 200N - 8500W	W - 1	143	Southern Saskatchewan (Canada to W. Kansas)	5000N - 10200W 3700N - 10000W	H - 2
124	Africa October - March	3000S - 1000E 3000S - 5500E 700S - 5500E 0 - 1000E	W - 1	144	Southern Saskatchewan (Canada to Rapid City, S.D.)	5000N - 10500W 4400N - 10000W	H - 2

TABLE I.- PRELIMINARY EARTH RESOURCES EXPERIMENT

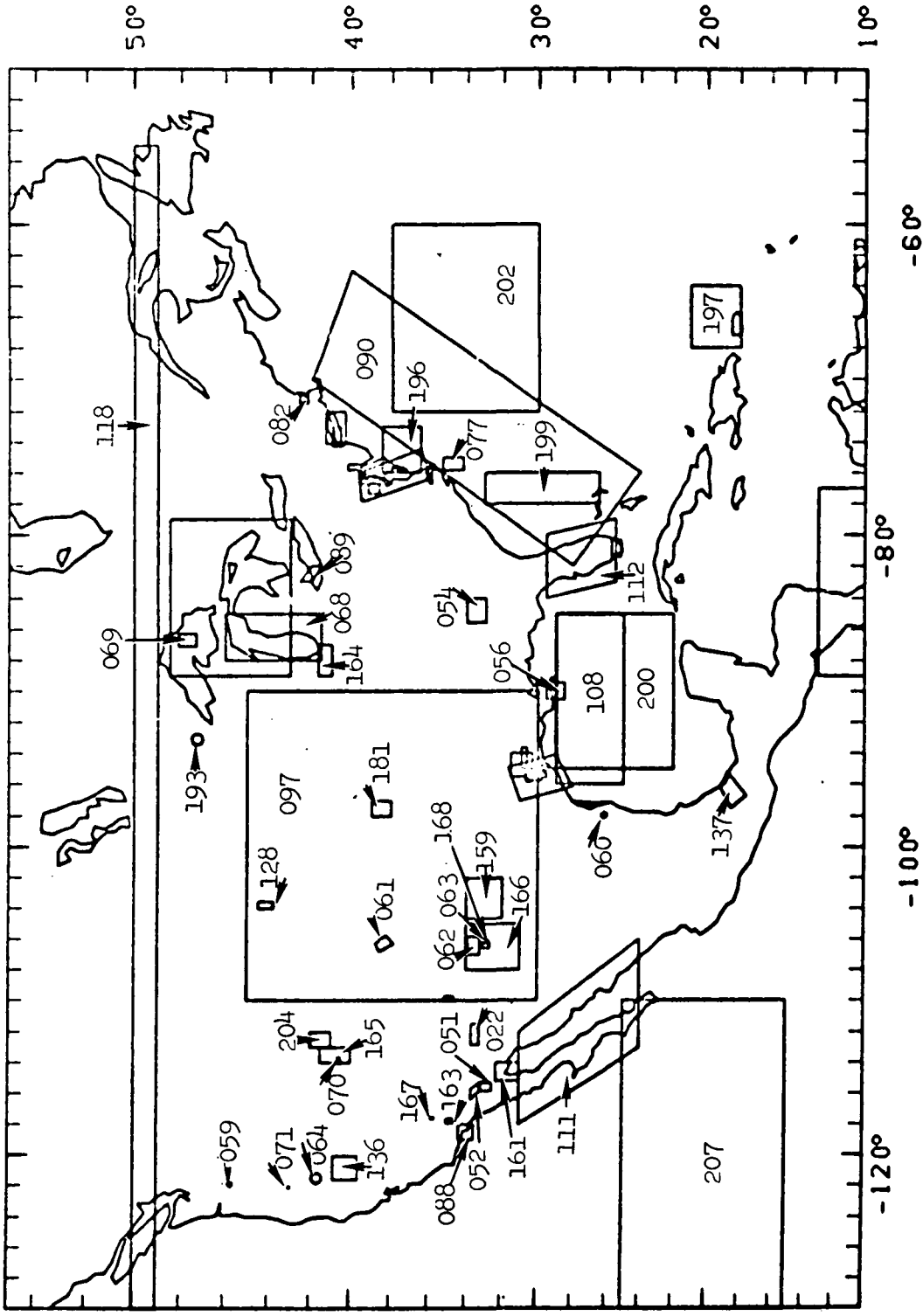
PACKAGE TEST SITES AS OF MAY 1971 - Concluded

Test site no.	Test site name	Coordinates	Experiment no.	Test site no.	Test site name	Coordinates	Experiment no.
145	Great Falls, Montana to Houston, Texas	4730N - 10000W 4730N - 11115W 30N - 105W 30N - 95W	H - 2	193	Iron Ore Range, Minnesota	4717N - 9304W 15 n. mi. radius	E - 7 G - 1
146	Pacific Ocean	5000N - 14500W 3000N - 14000W	0 - 2 0 - 4	194	Western Big Bend	2900N - 10200W 3300N - 10700W	L - 1
147	St. Lawrence Seaway	4500N - 6000W 5000N - 6500W	0 - 5	195	Southern California	3200N - 11500W 3500N - 12000W	L - 1
148	Lake Huron	4454N - 8236W 4430N - 8212W	0 - 5	196	Wallops Island	3830N - 7300W 3630N - 7600W	E - 1
159	El Paso Area	3400N - 10800W 3100N - 10500W	E - 2	197	P. R. Trench (Puerto Rico)	1800N - 6800W 2100N - 6400W	E - 1
161	Gulf of California (Mouth of Colorado)	3220N - 11510W 3100N - 11400W	E - 4	198	N. Atlantic	3500N - 3500W 5000N - 2500W	E - 1
162	Meteor Crater, Arizona	3502N - 11102W 3501N - 11101W	E - 6	199	Florida (Blake Escarpment)	2630N - 7800W 3300N - 7600W	E - 1
163	Edwards AFB, Dry Lake	3502N - 11755W 3438N - 11740W	E - 6	200	Gulf of Mexico	2200N - 8500W 2900N - 9500W	E - 1
164	Illinois Sand Dunes	4140N - 8900W 4100N - 8700W	E - 6	201	Isthmus of Panama	600N - 7700W 1300N - 8900W	E - 1
165	Bonneville Salt Flats	4040N - 11400W 4030N - 11340W	E - 6	202	Atlantic (Gulf Stream)	3000N - 6000W 3800N - 7200W	E - 1
166	Roswell, Oil Fields	3400N - 10440W 3200N - 10200W	E - 6	203	Great Lakes	4300N - 7900W 4830N - 8900W	E - 1
167	China Lake, California	3547N - 11740W 3541N - 11735W	E - 6	204	Salt Flats	4100N - 11200W 4200N - 11300W	E - 1
168	Holloman AFB., New Mexico	3255N - 10610W 3245N - 10600W	E - 6	205	Marianas Trench	1030N - 14030 ^E 1600N - 14730 ^E	E - 1
171	Hurricanes - Prime	4500N - 10000W 1200N - 4500W	W - 5	206	Indian Low	200N - 7200E 800N - 7800E	E - 1
172	Hurricanes - U.S. Sec.	3500N - 15000W 1500N - 11000W	W - 5	207	South of Baja	1500N - 11000W 2500N - 13000W	E - 1
173	Hurricane - N. Pacific June - October	4500N - 17000W 500N - 13000E	W - 5	208	Japanese Trench	2700N - 14100E 3500N - 14400E	E - 1
174	Hurricane - N. Indian Ocean July - November	3000N - 8700E 500N - 6000E	W - 5	209	Java Trench	1200S - 10300E 600S - 12000E	E - 1
175	Hurricane - S. Indian Oceans January - March	4000S - 8000E 500S - 4000E	W - 5	210	West Australia	1500S - 10500E 3000S - 11300E	E - 1
178	Delaware Estuary	4013N - 7550W 3933N - 7530W	E - 4	211	East Australia	1500S - 15300E 3000S - 16500E	E - 1
179	Hudson River, New York	4120N - 7405W 4020N - 7200W	E - 4				
180	New York City	4100N - 7420W 4033N - 7300W	E - 4				
181	Kansas Wheat	3900N - 9800W 3800N - 9700W	E - 6				



(a) World map

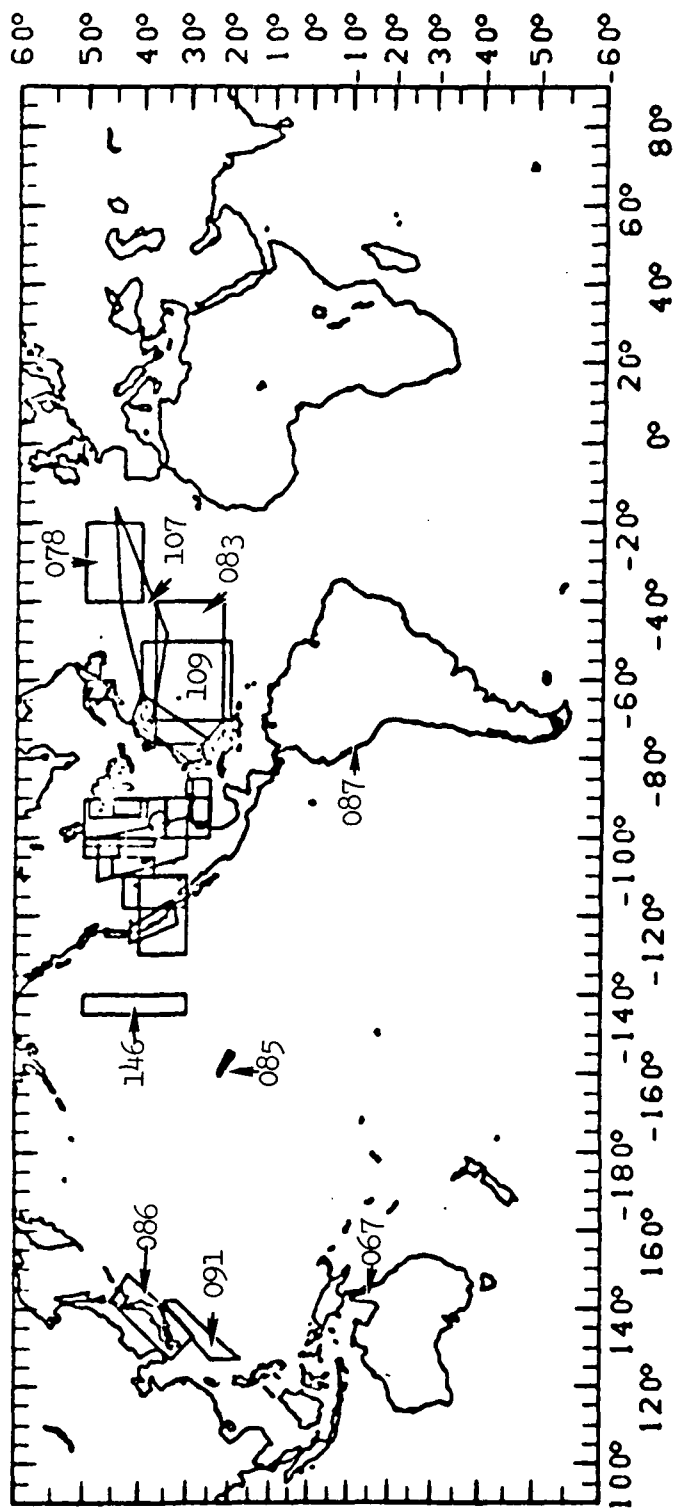
Figure 1.- EREP sites - disciplines E and F



(b) United States map

Figure 1.- Concluded

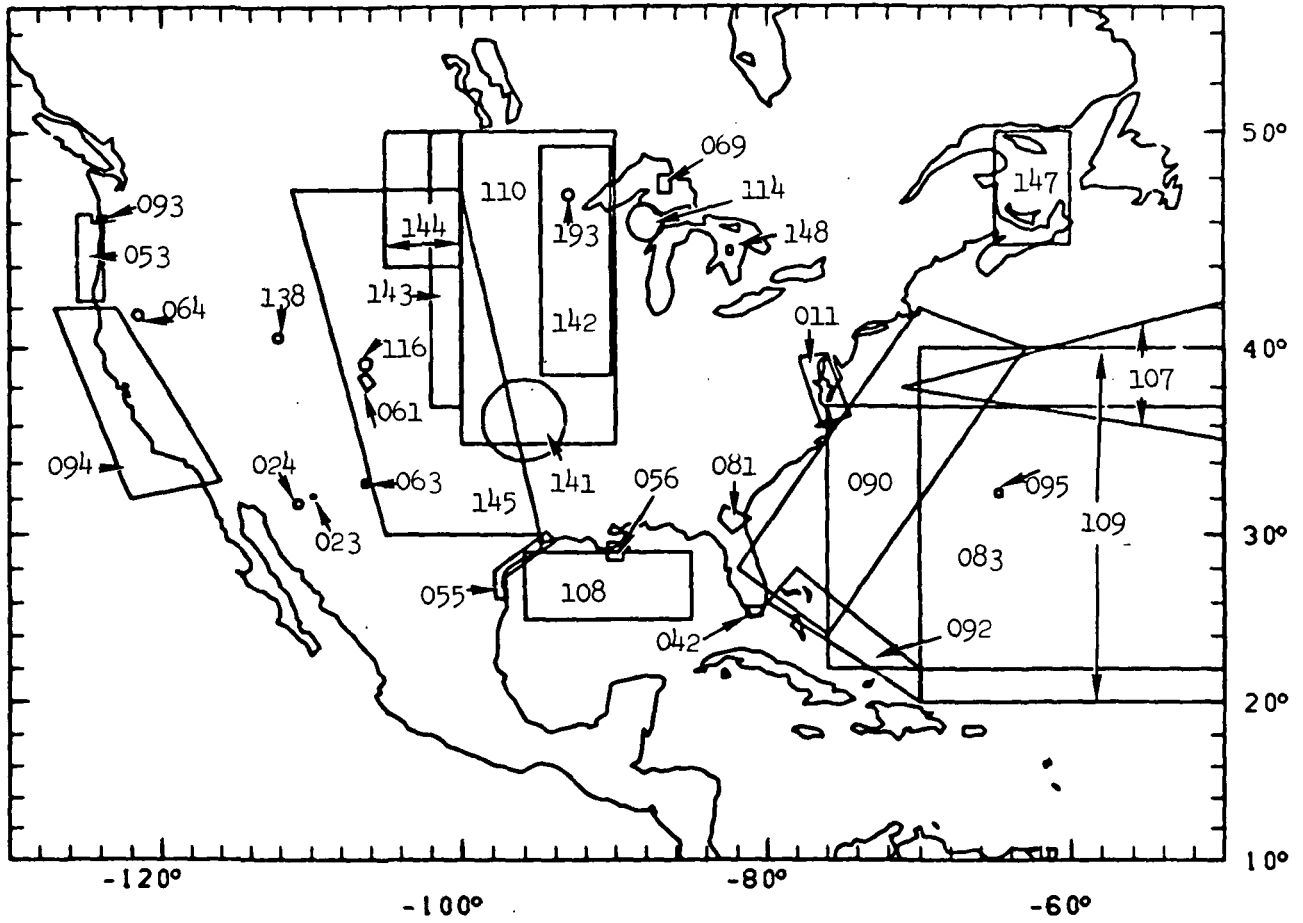
EREP DISCIPLINES H.G.O - SL-1 LAUNCHED 4/30/73



(a) World map

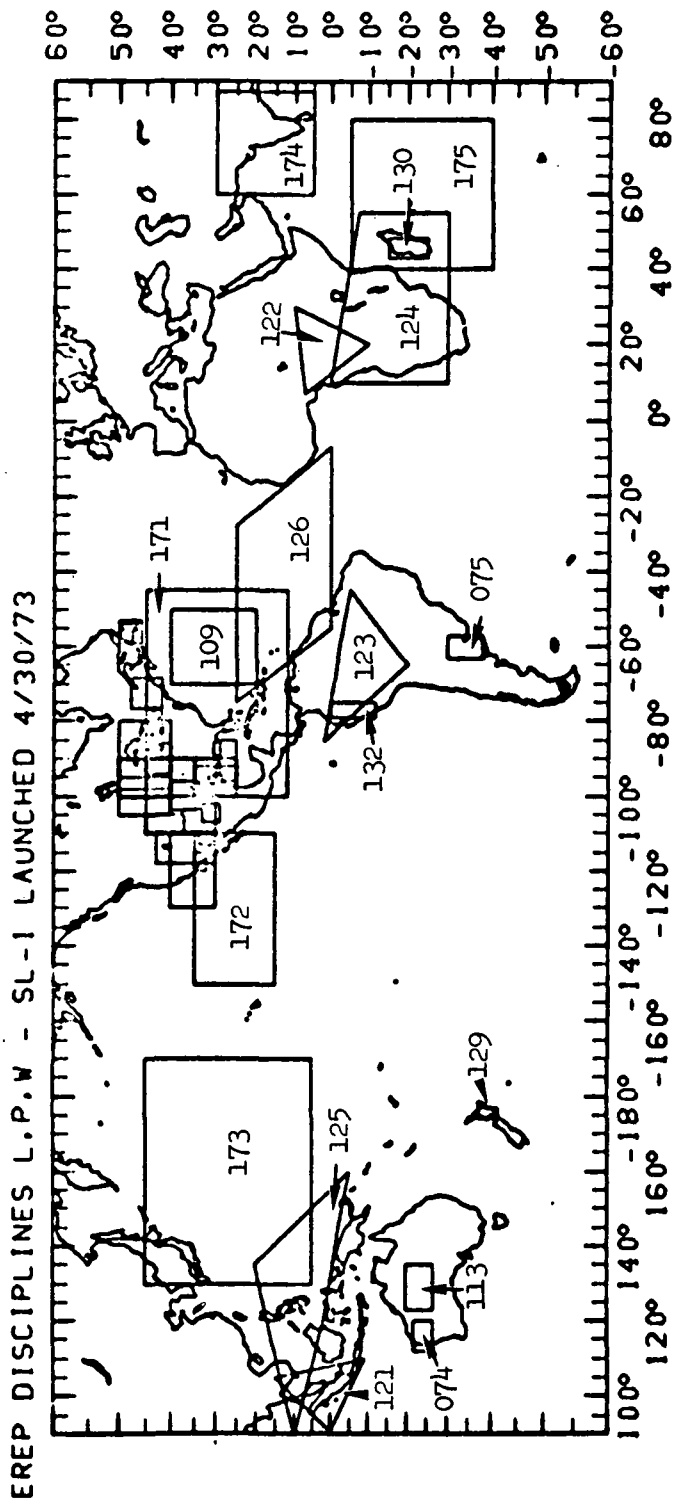
Figure 2.- EREP sites - disciplines H, G, and O

EREP DISCIPLINE H.G.O



(b) United States map

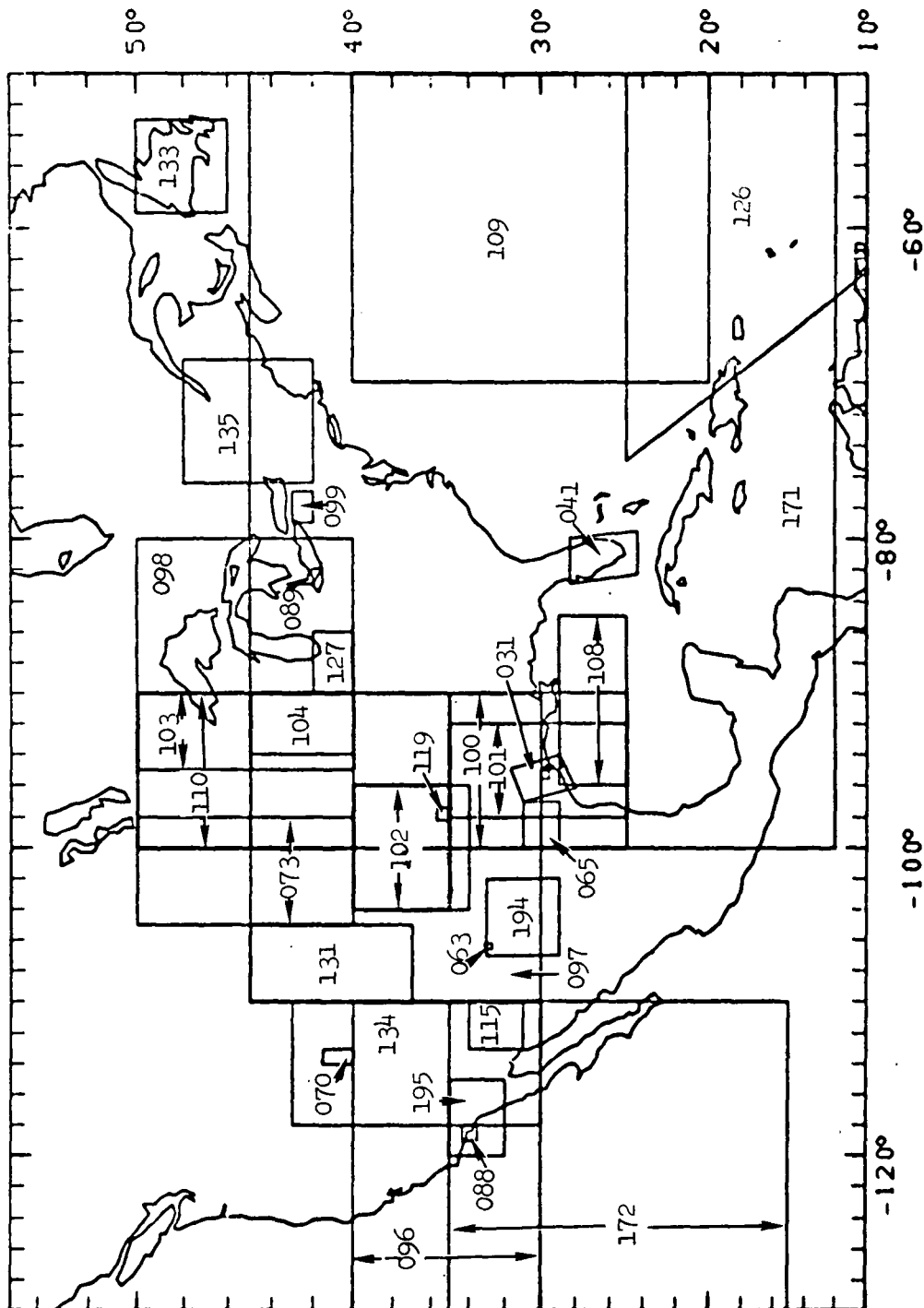
Figure 2.- Concluded



(a) World map

Figure 3.- EREP sites - disciplines L, P, and W

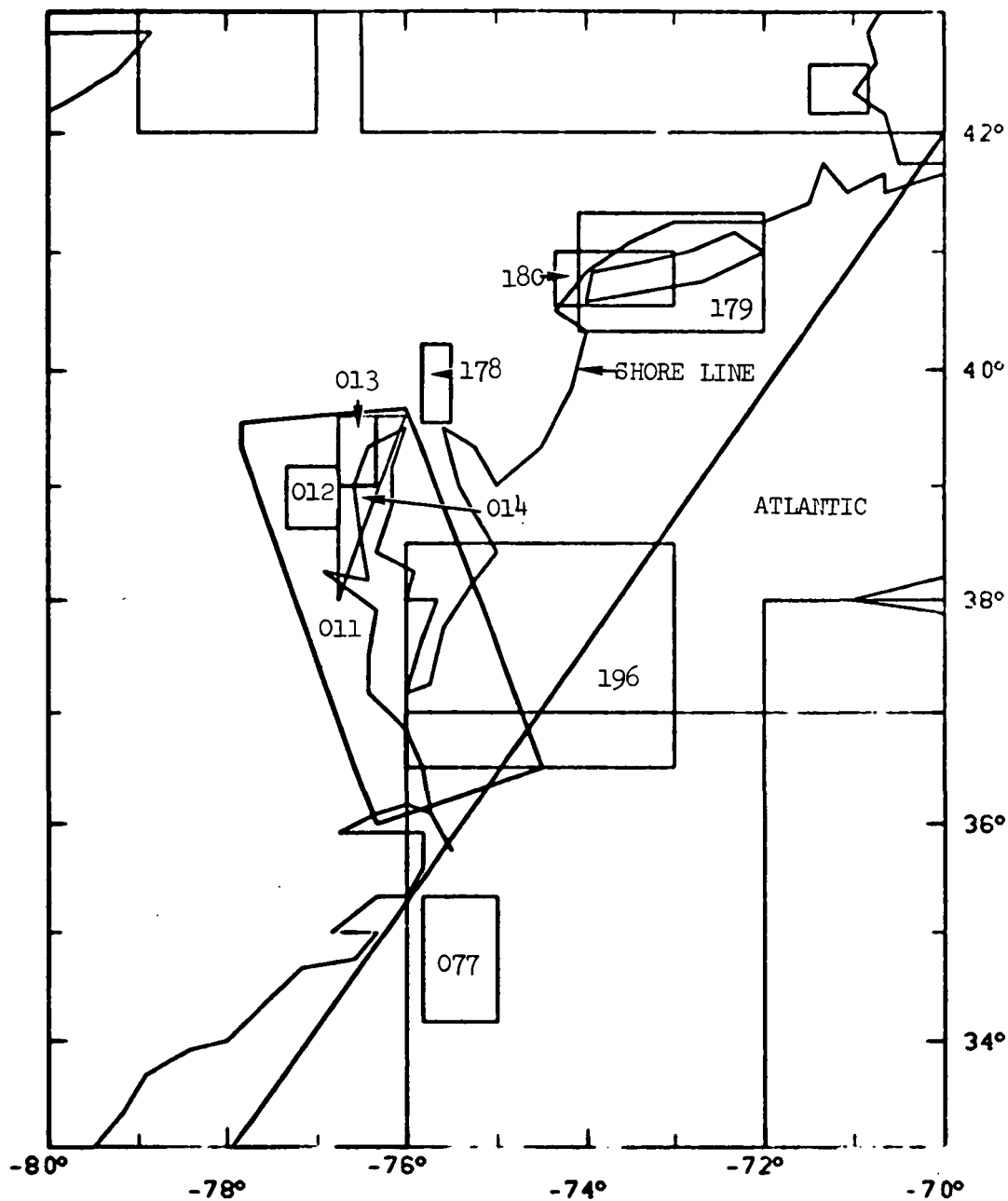
EREP DISCIPLINES L.P.W - SL-1 LAUNCHED 4/30/73



(b) United States map

Figure 3.- Concluded

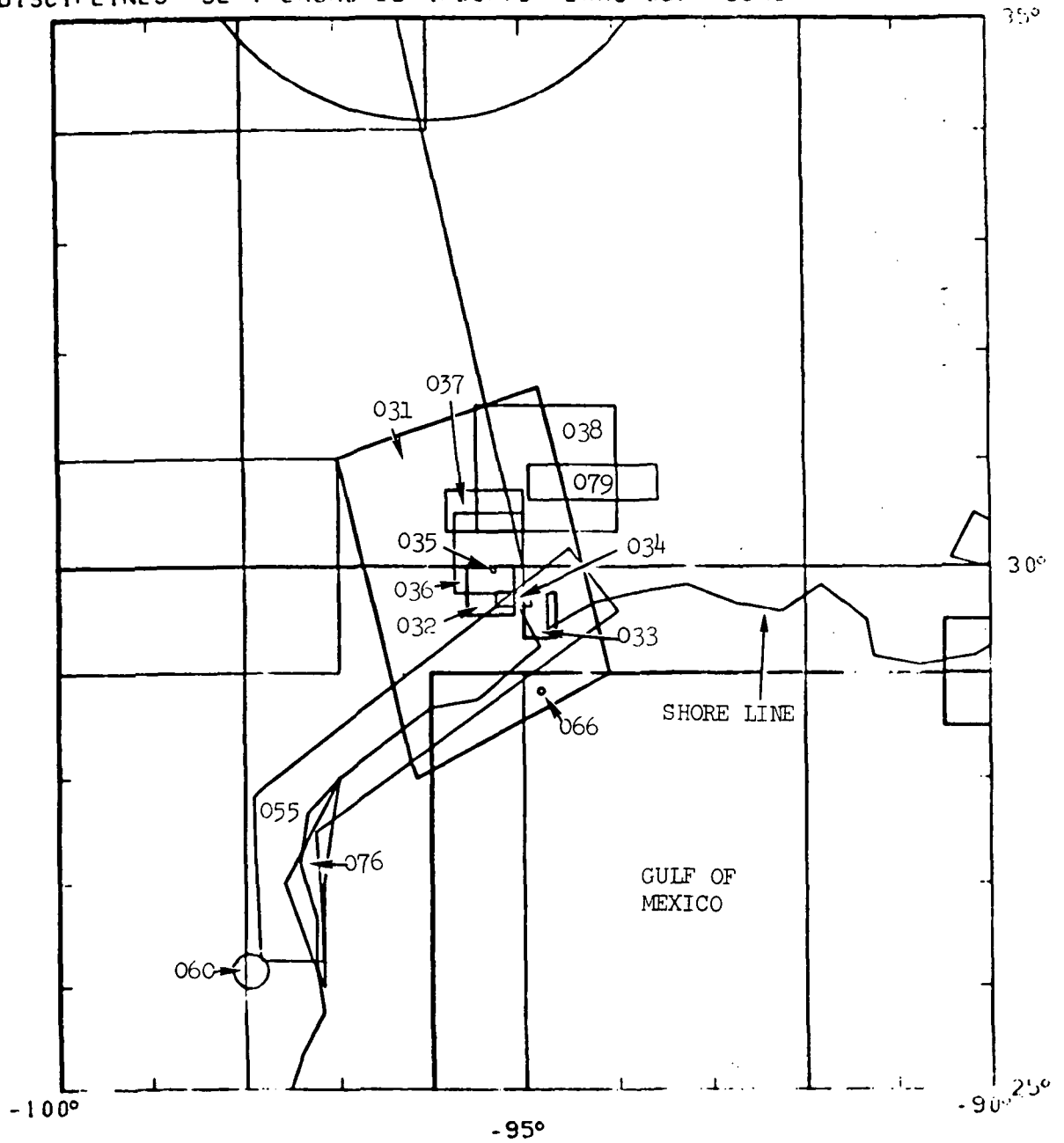
ALL EREP DISCIPLINES -SL-1 LAUNCHED 4/30/73-NEW YORK AREA



(a) New York-Baltimore area

Figure 4.- EREP sites - all disciplines

ALL EREP DISCIPLINES -SL-1 LAUNCHED 4/30/73-TEXAS GULF COAST



(b) Texas gulf coast area

Figure 4.- Concluded

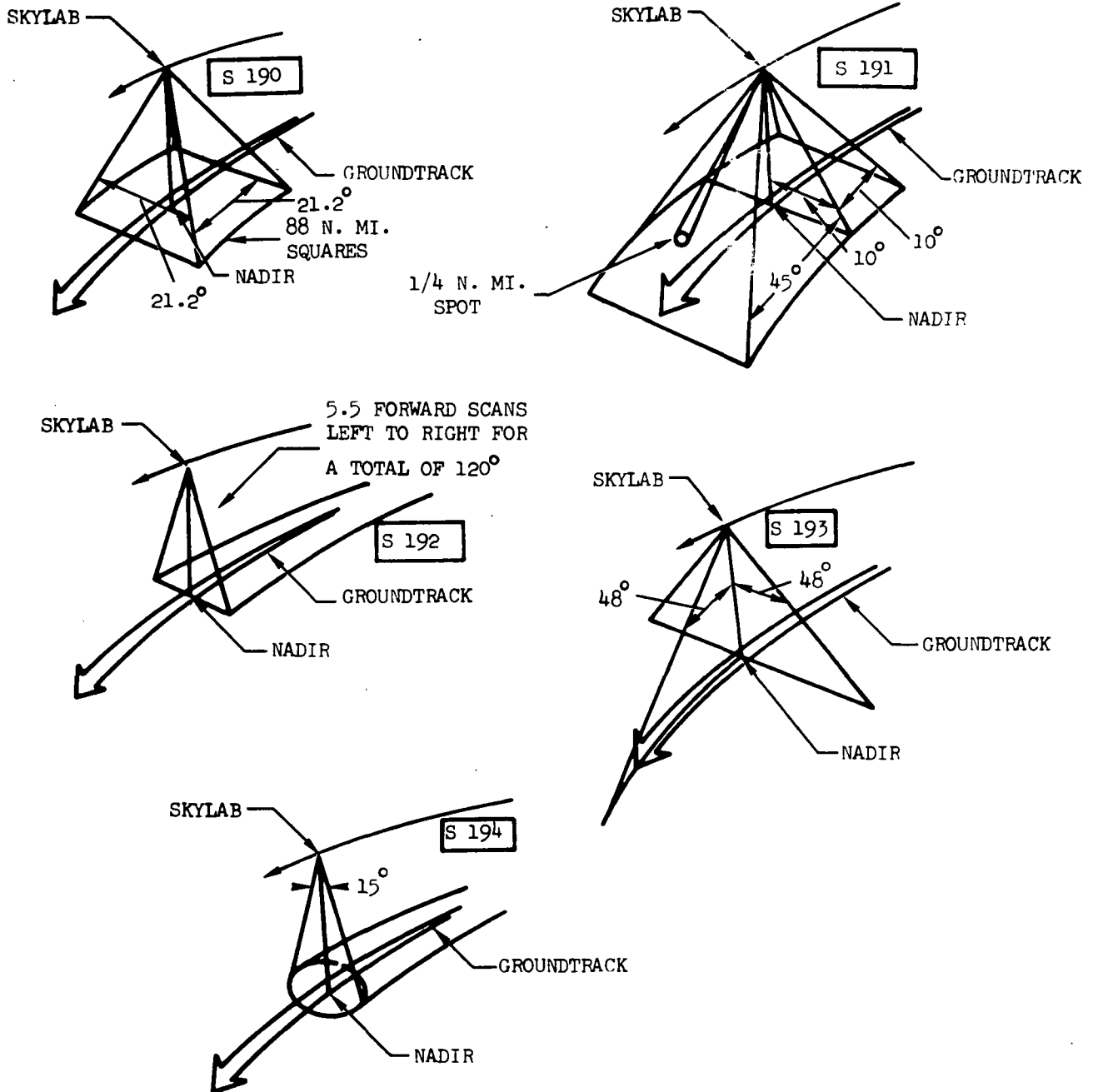
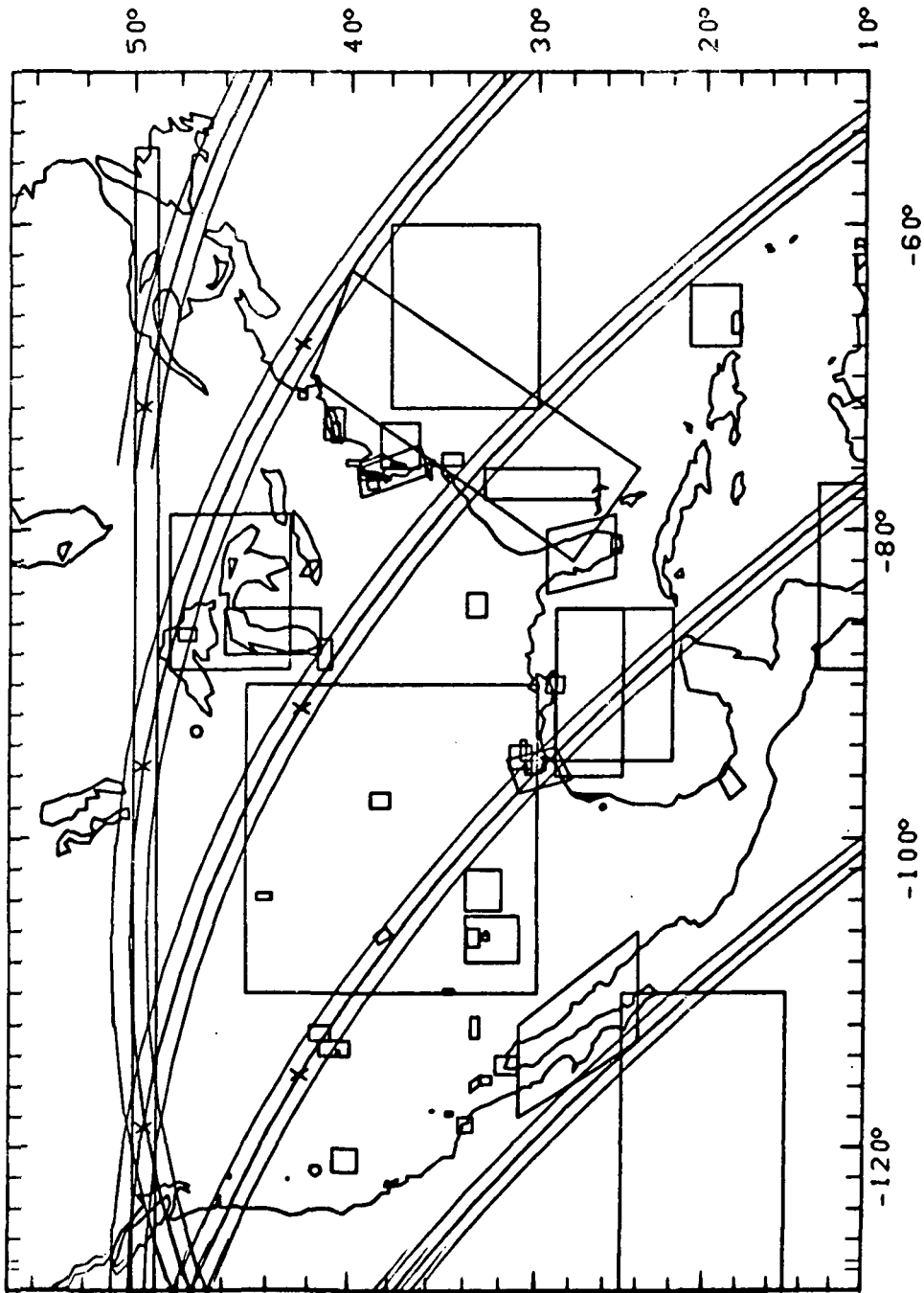
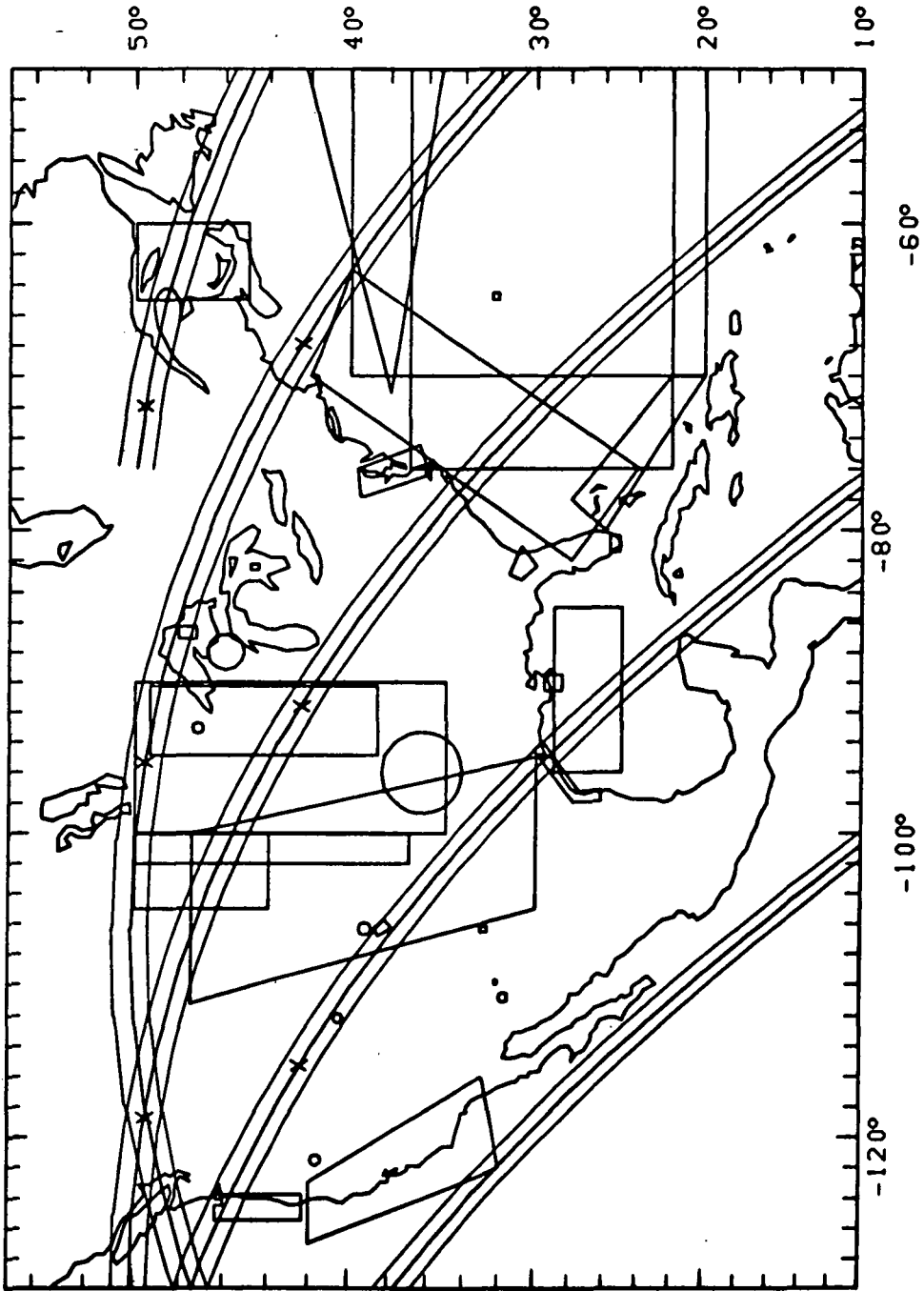


Figure 5.- EREP sensor field-of-view.

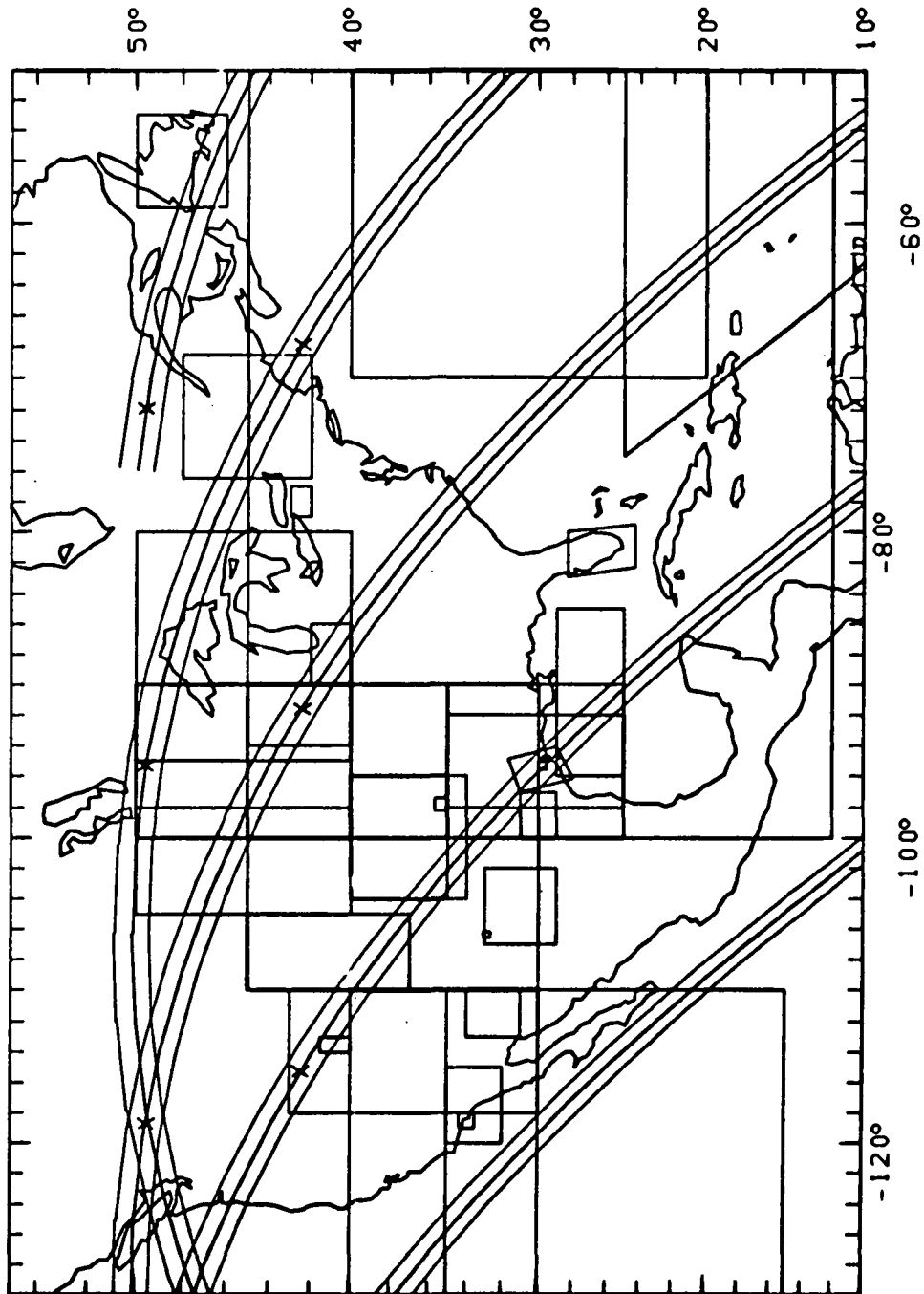
REV 2814-17 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



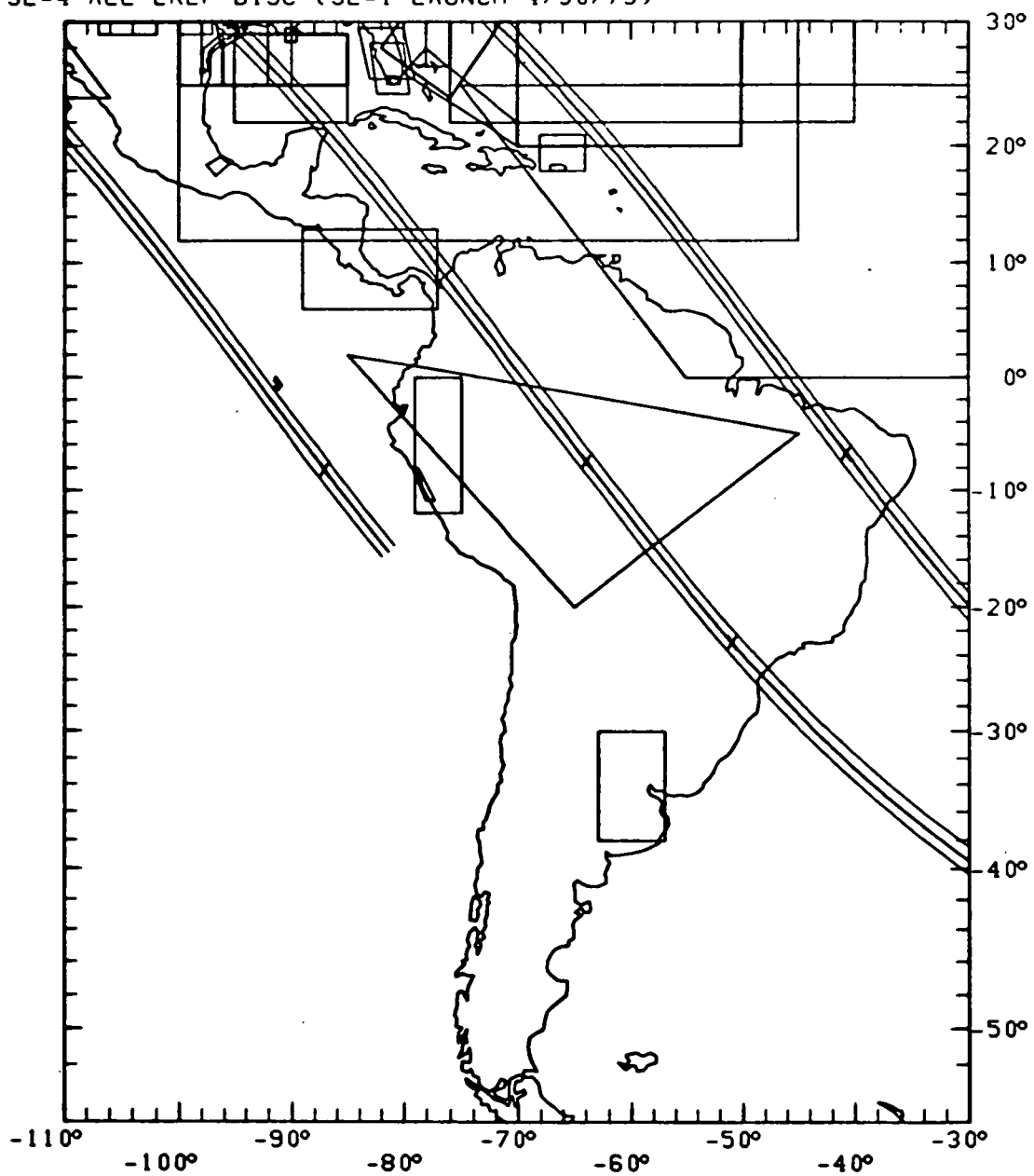
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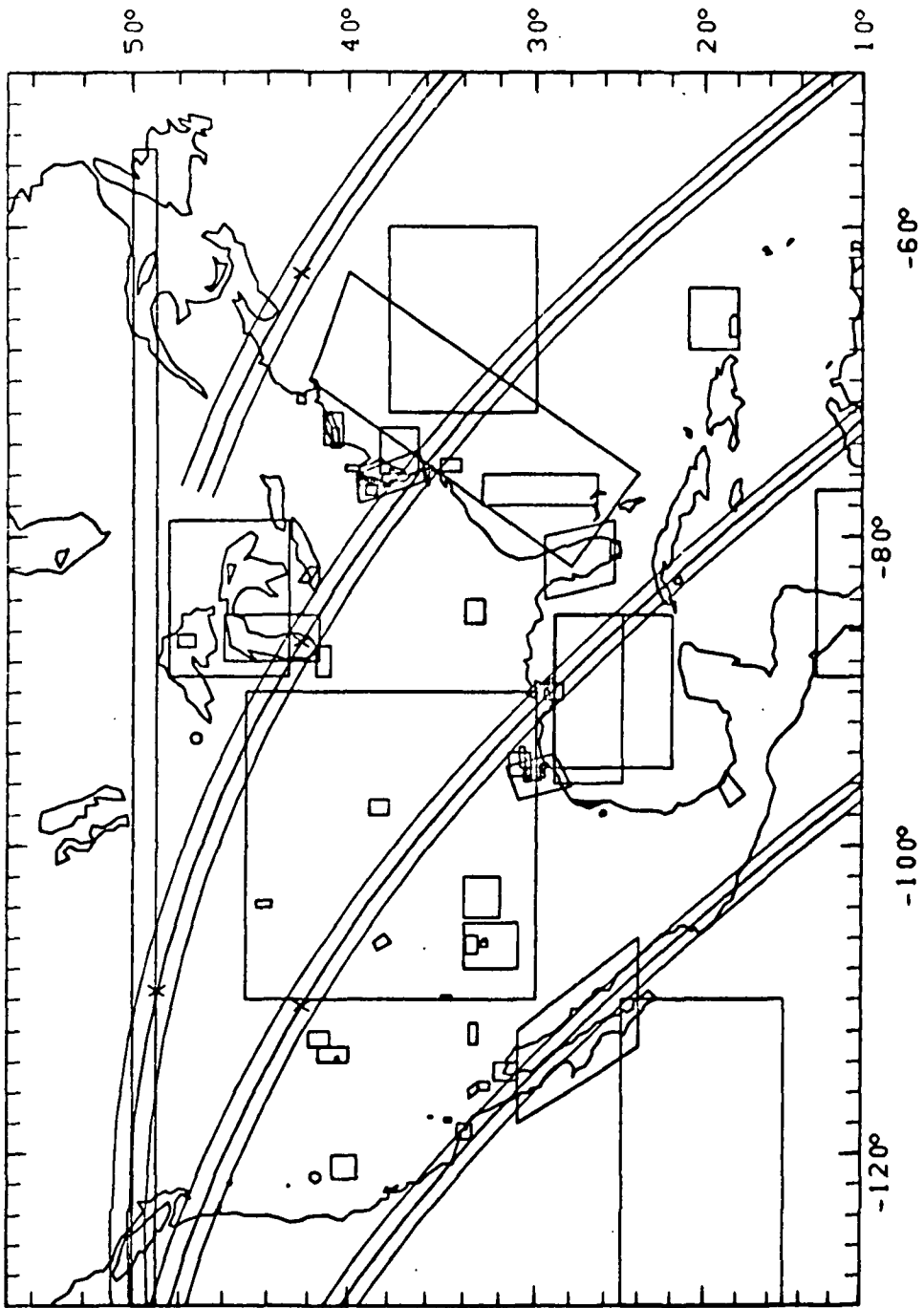
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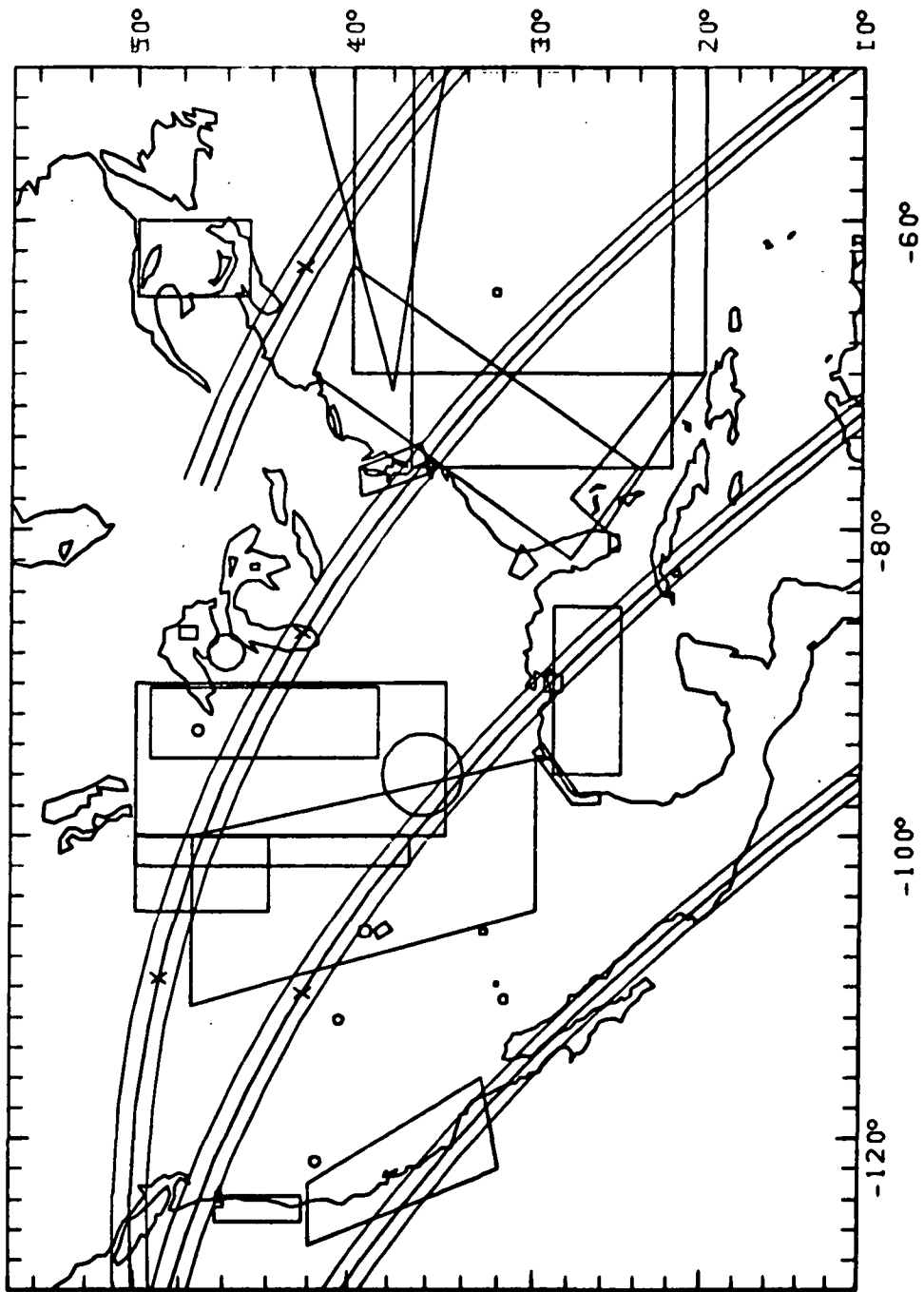
REV 2816-17 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



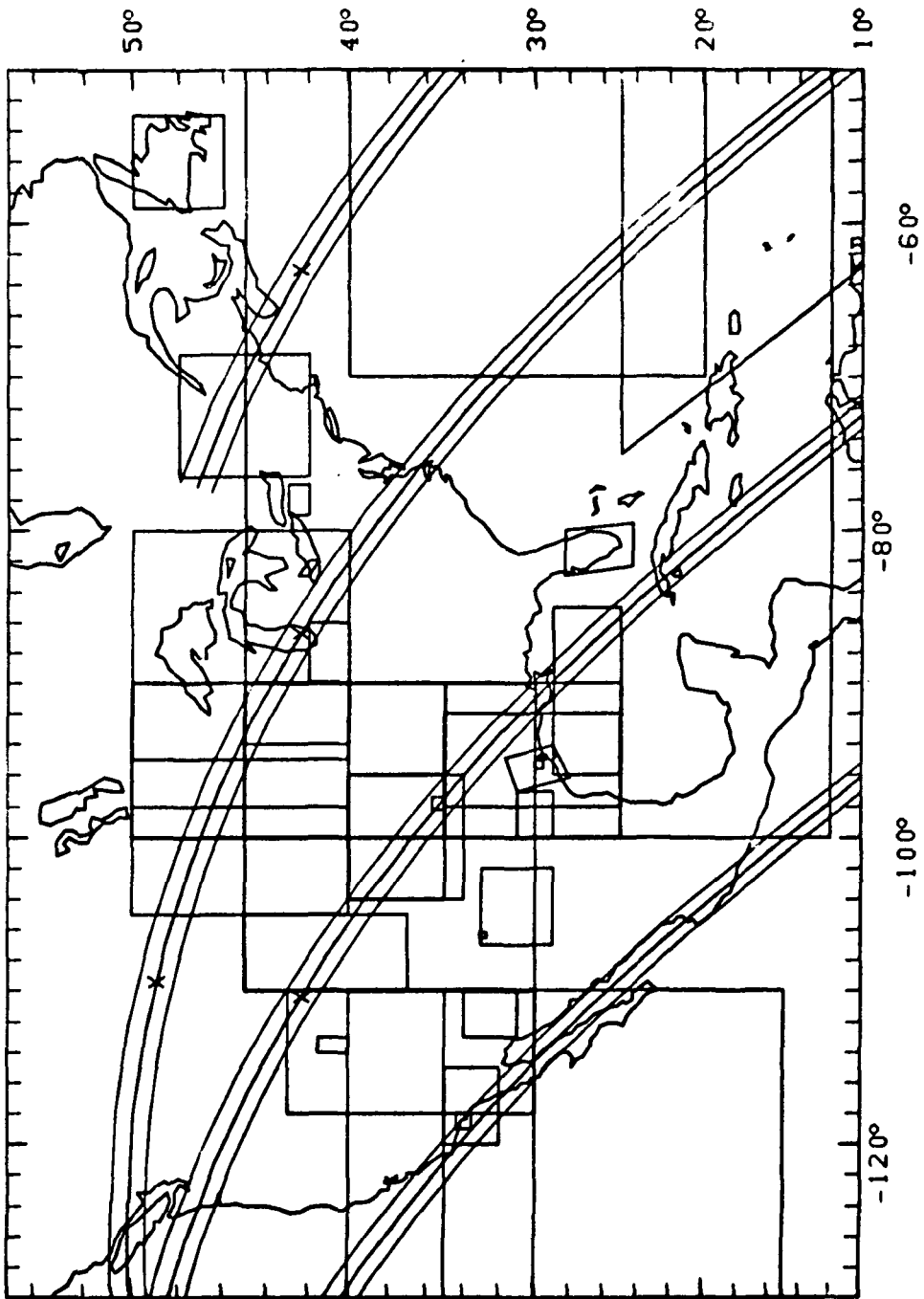
REV 2829-31 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



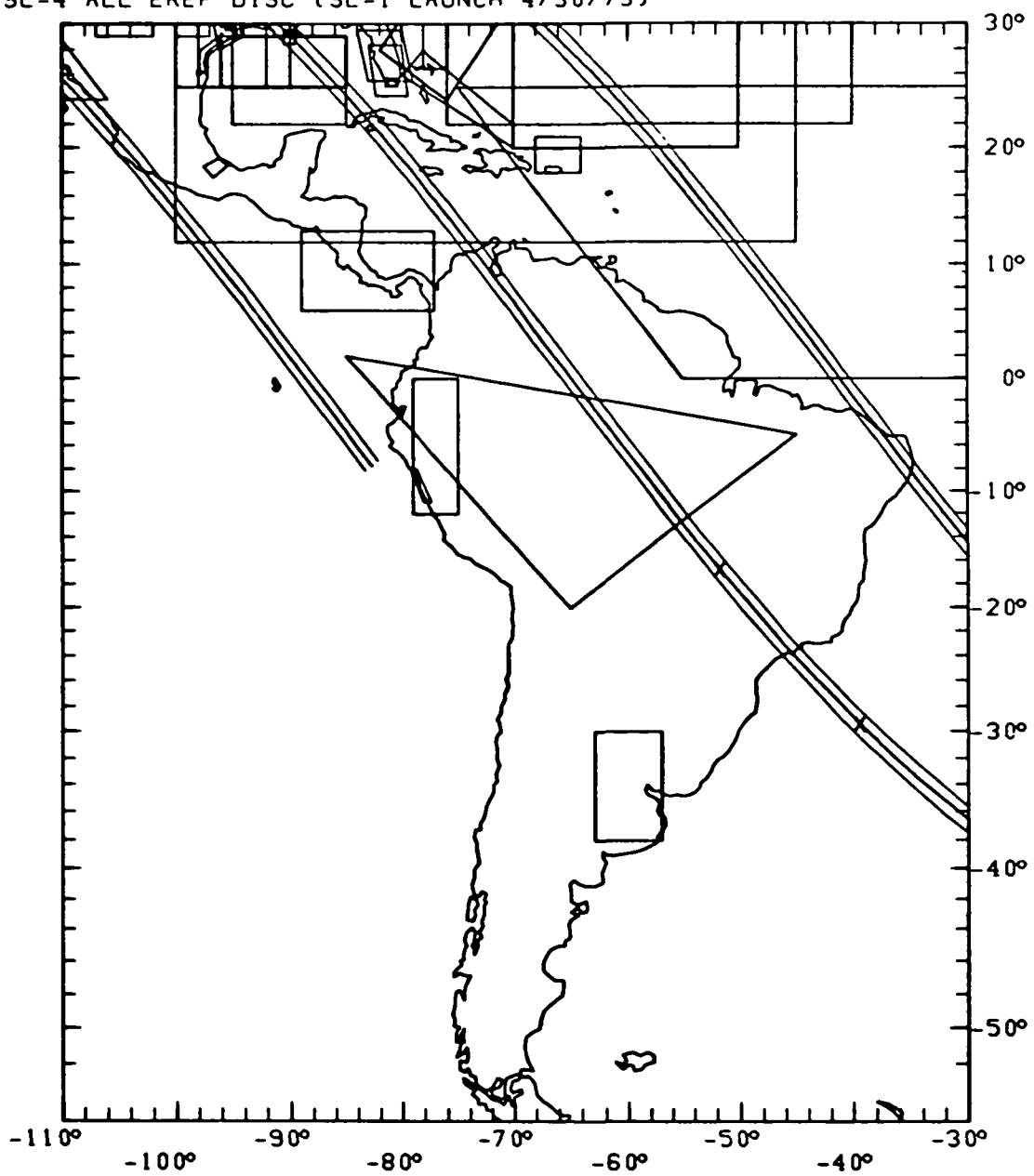
REV 2829-31 SL-4 EREP H.G.0 (SL-1 LAUNCH 4/30/73)



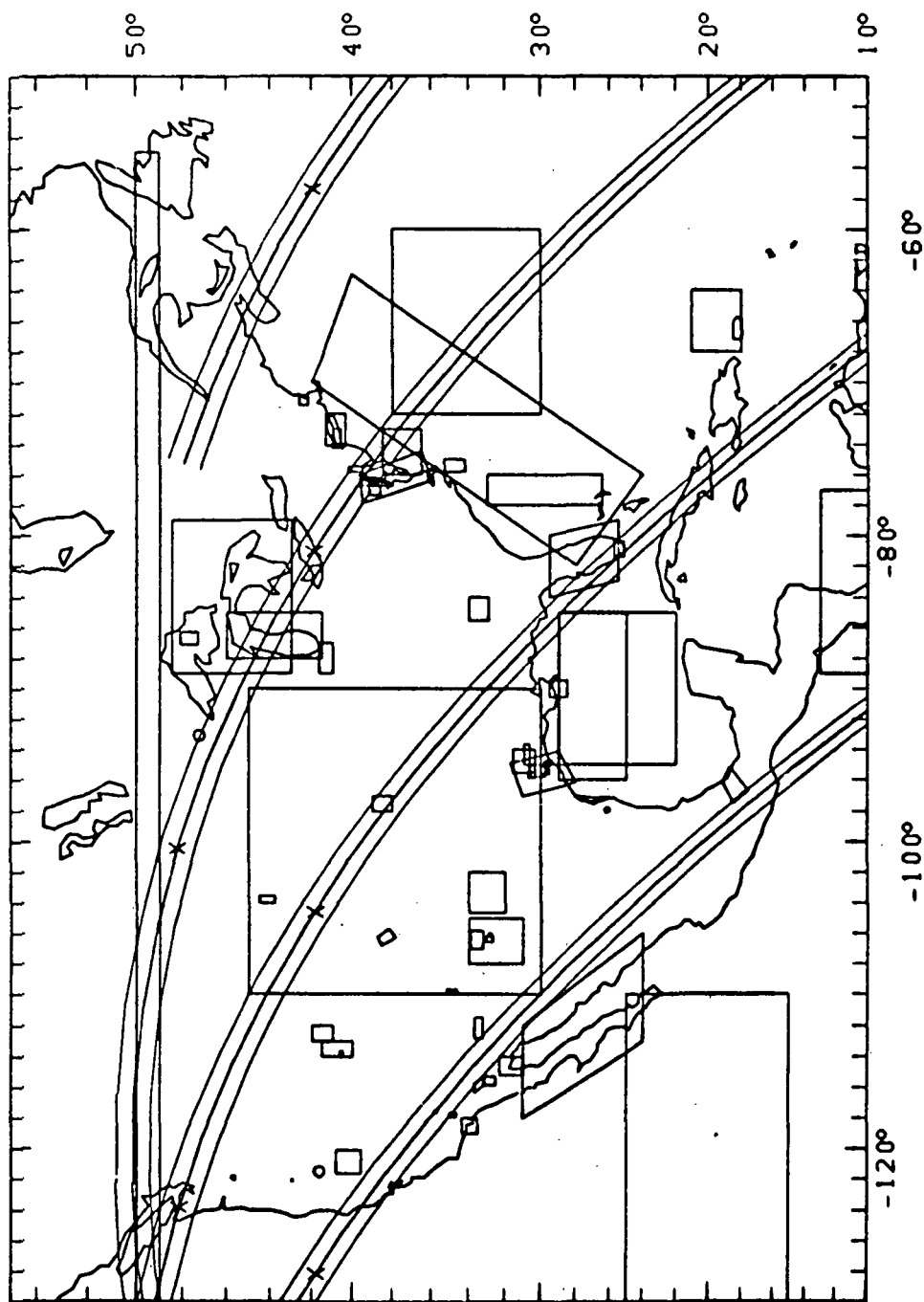
REV 2829-31 SL-4 EREP L.P.W (SL-1 LAUNCH 4/30/73)



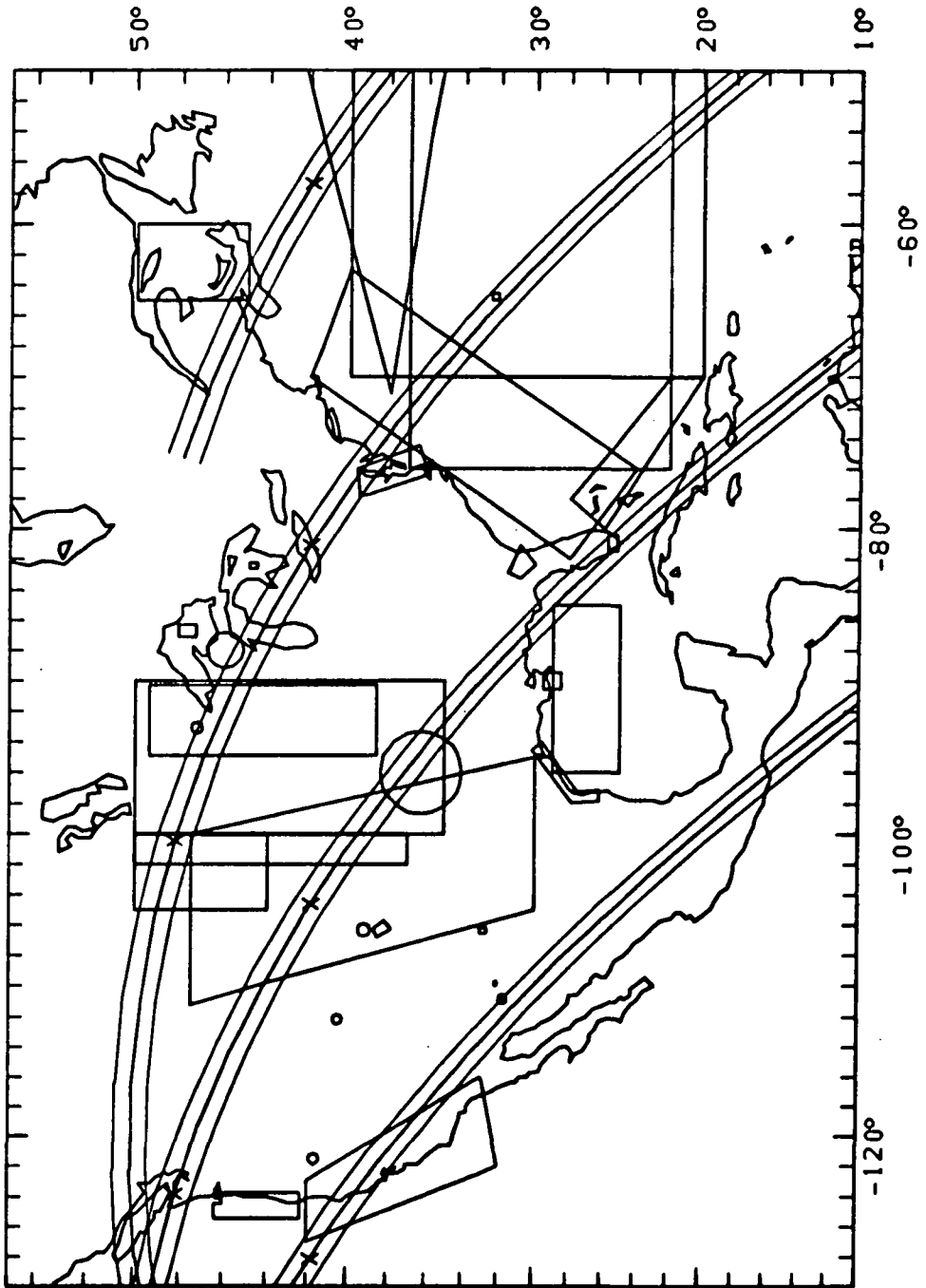
REV 2830-31 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



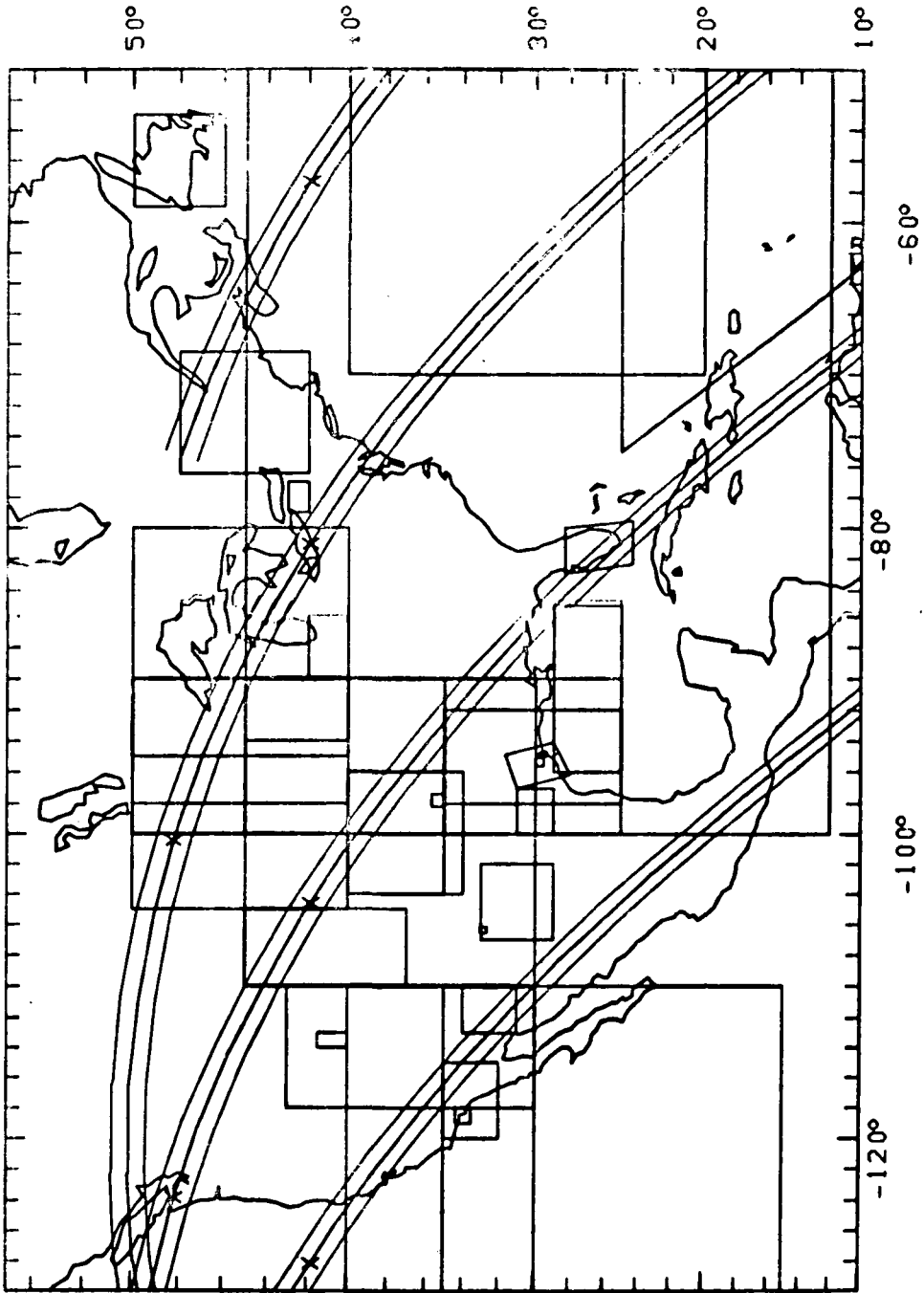
REV 2843-45 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



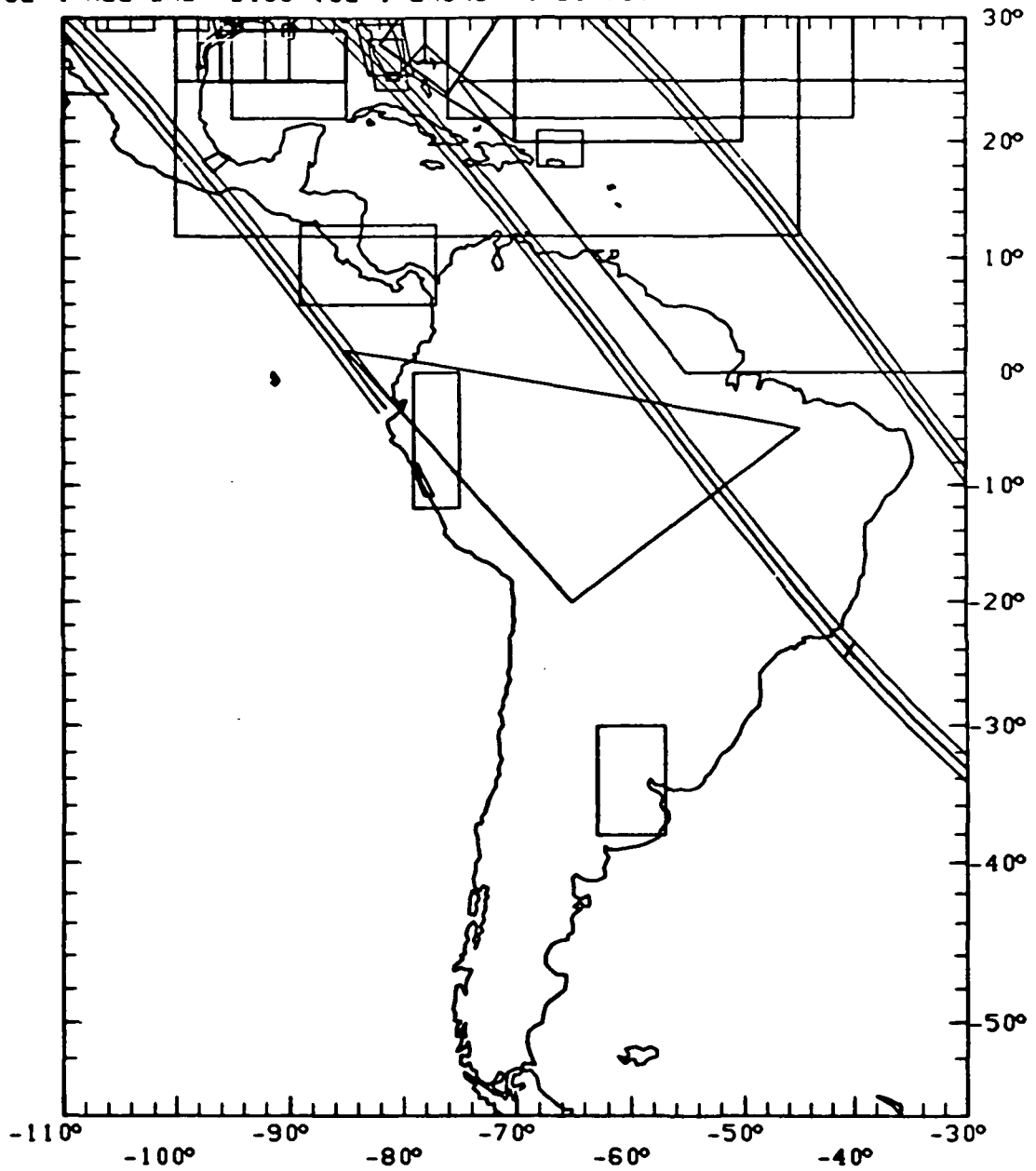
REV 2843-45 SL-4 EREP H.G.O (SL-1 LAUNCH 4/30/73)



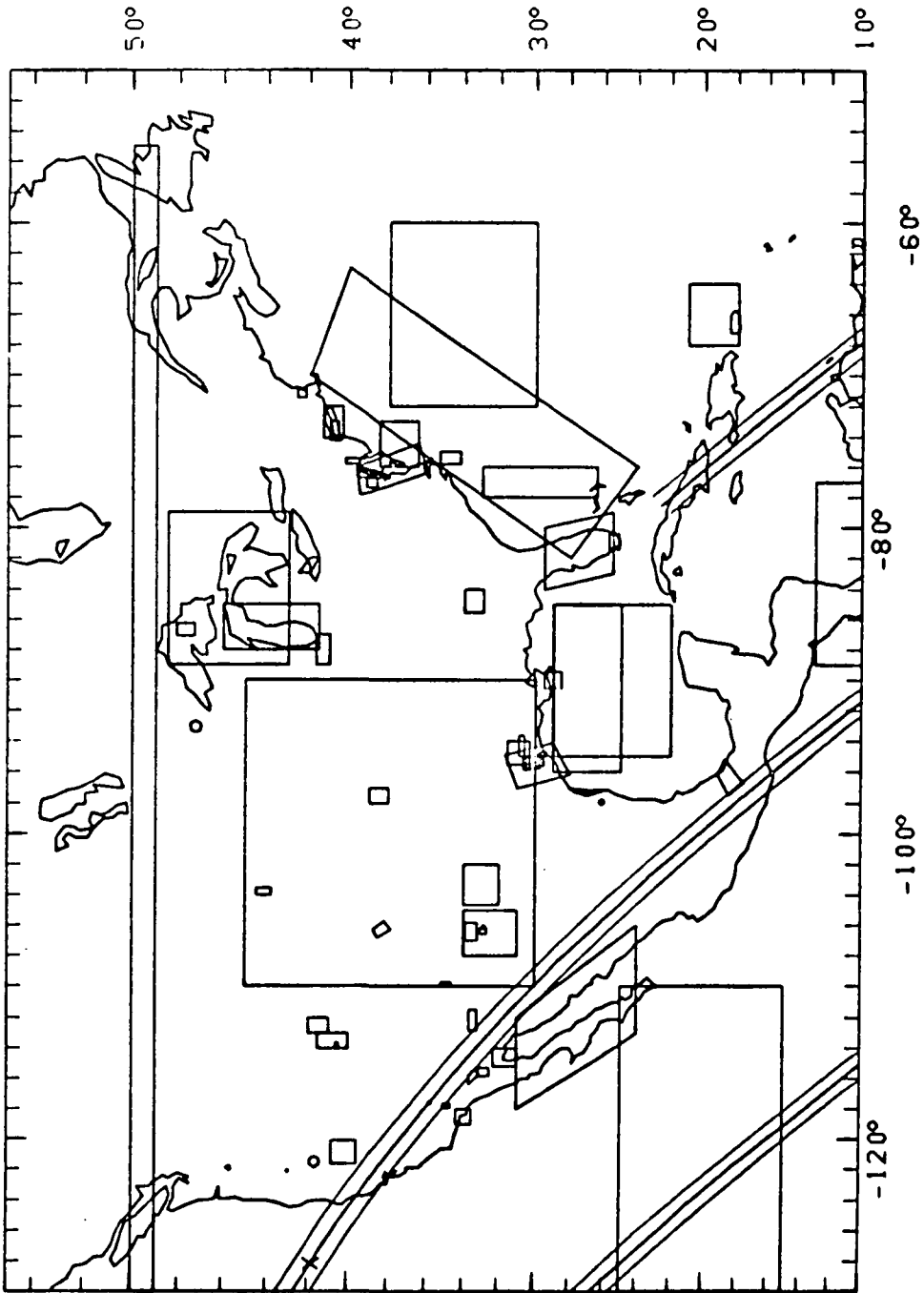
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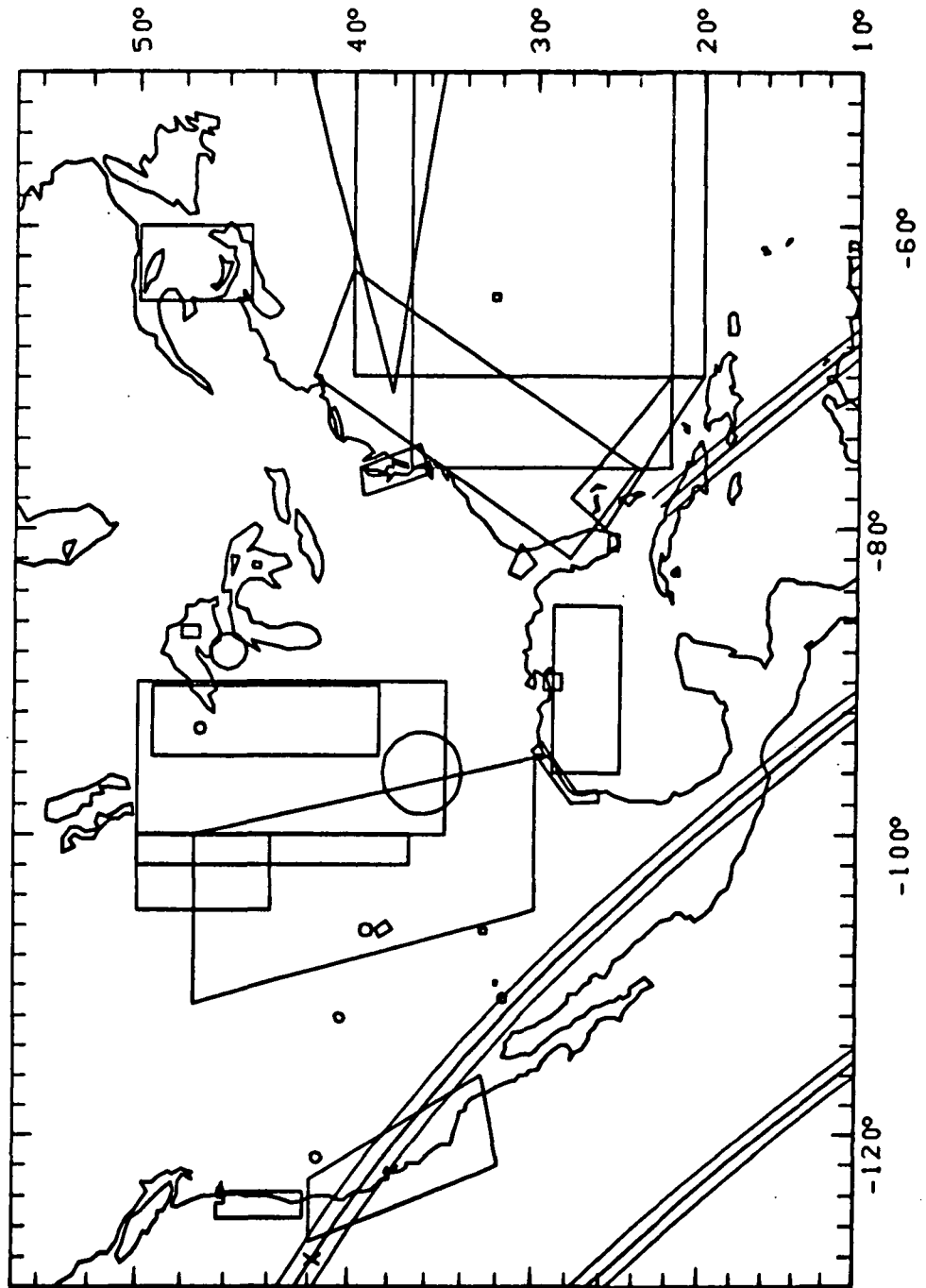


REV 2844-45 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)

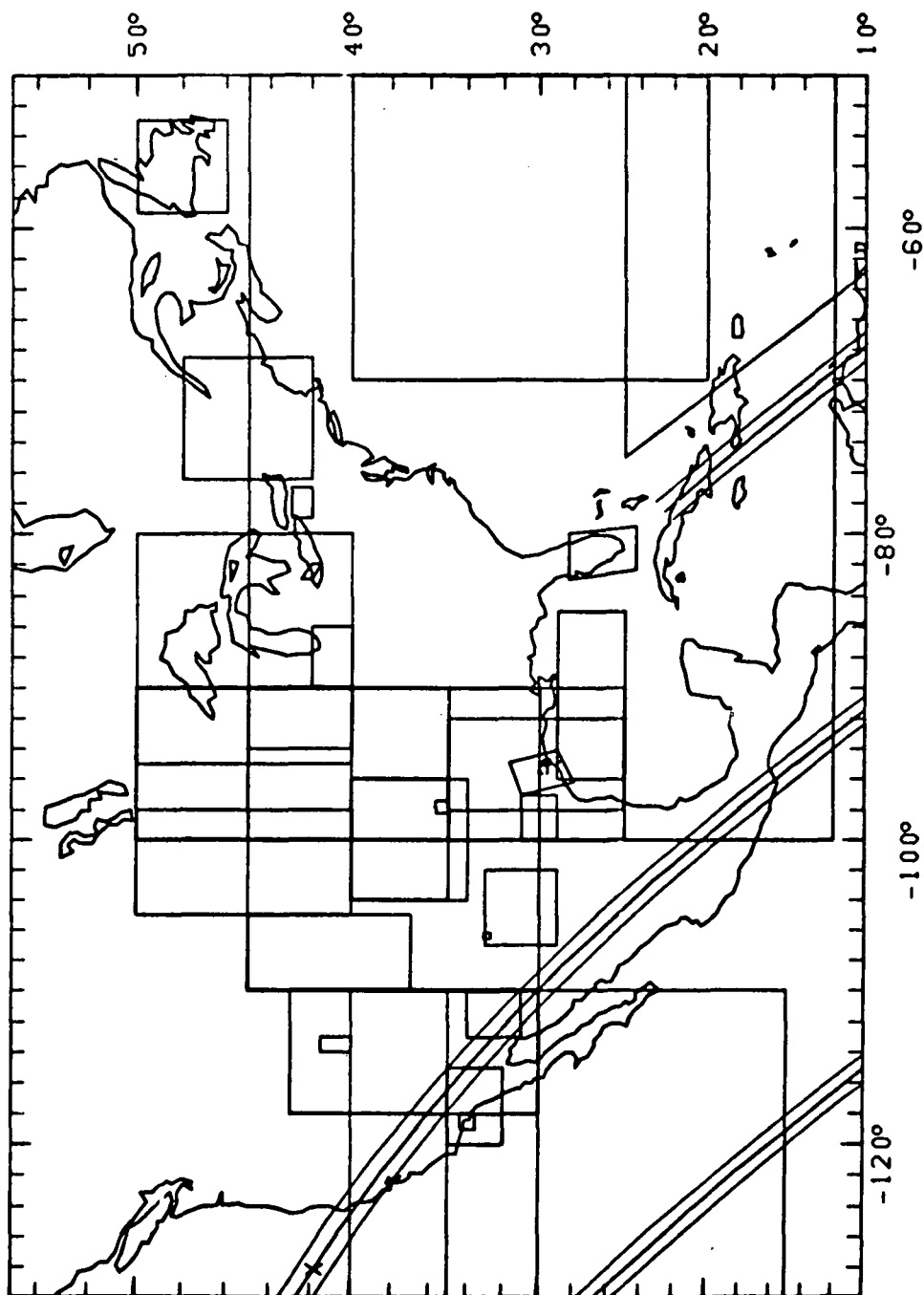


REV 2845-46 SL-4 EREP E.F (SL-I LAUNCH 4/30/73)

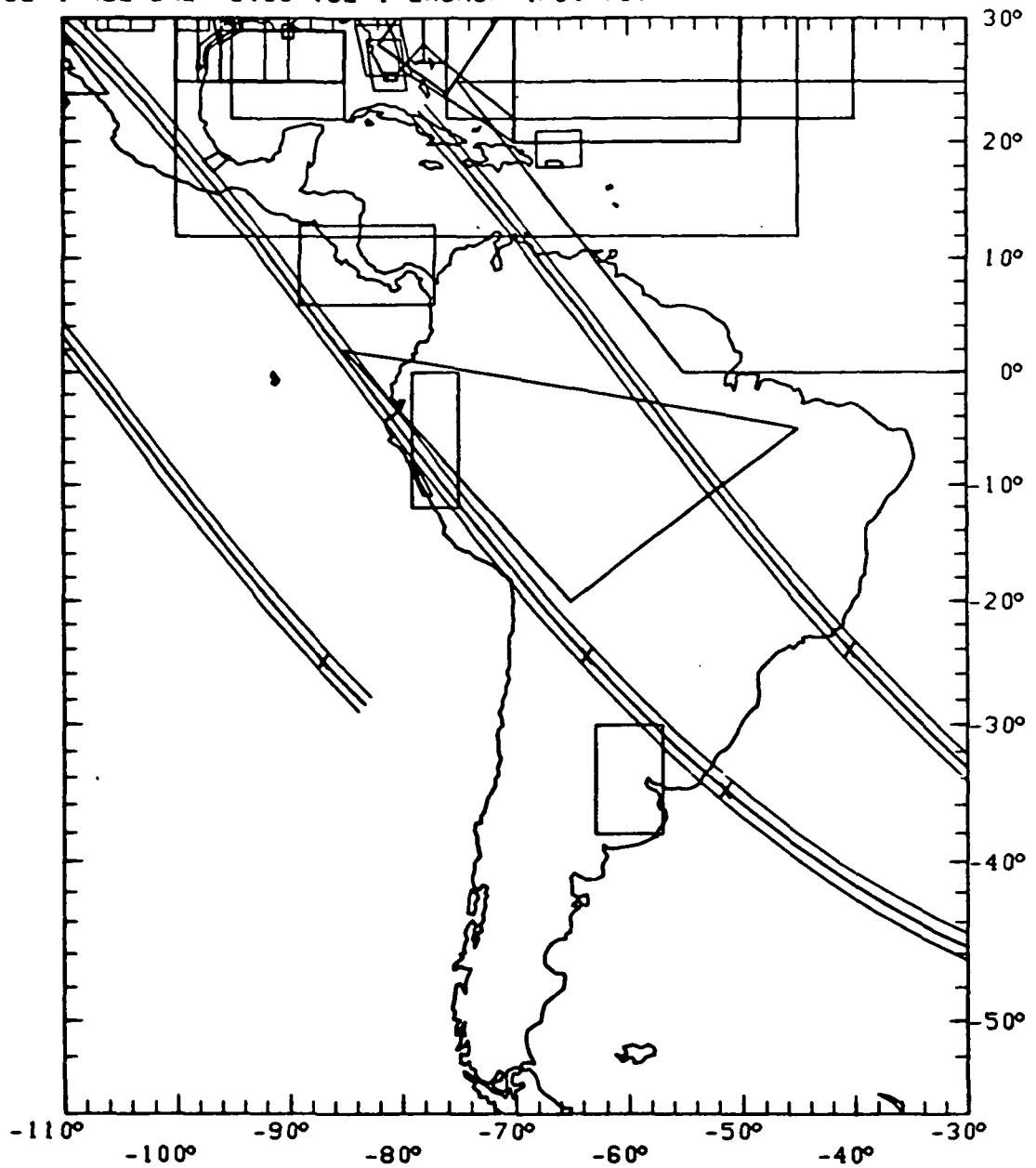




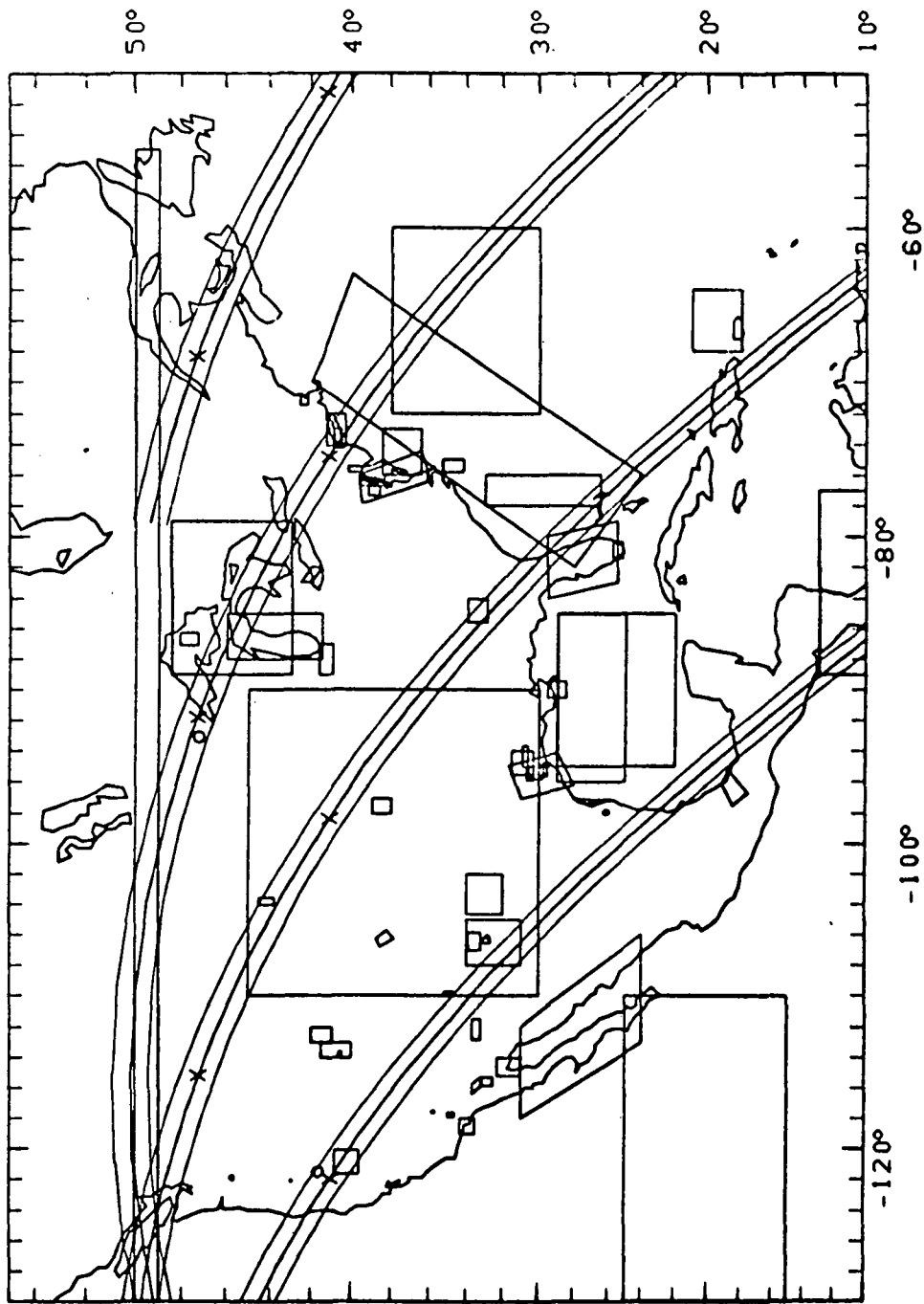
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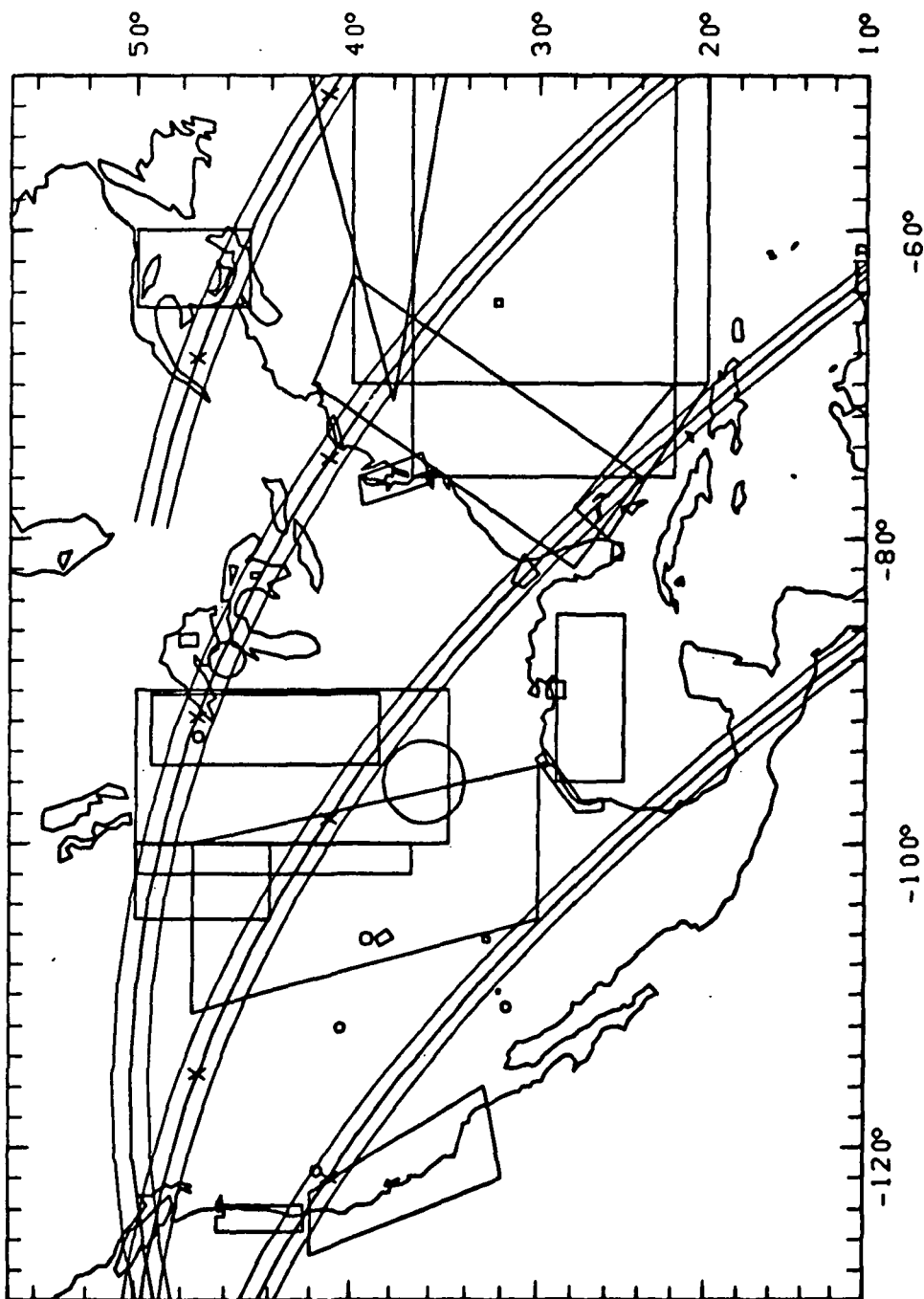
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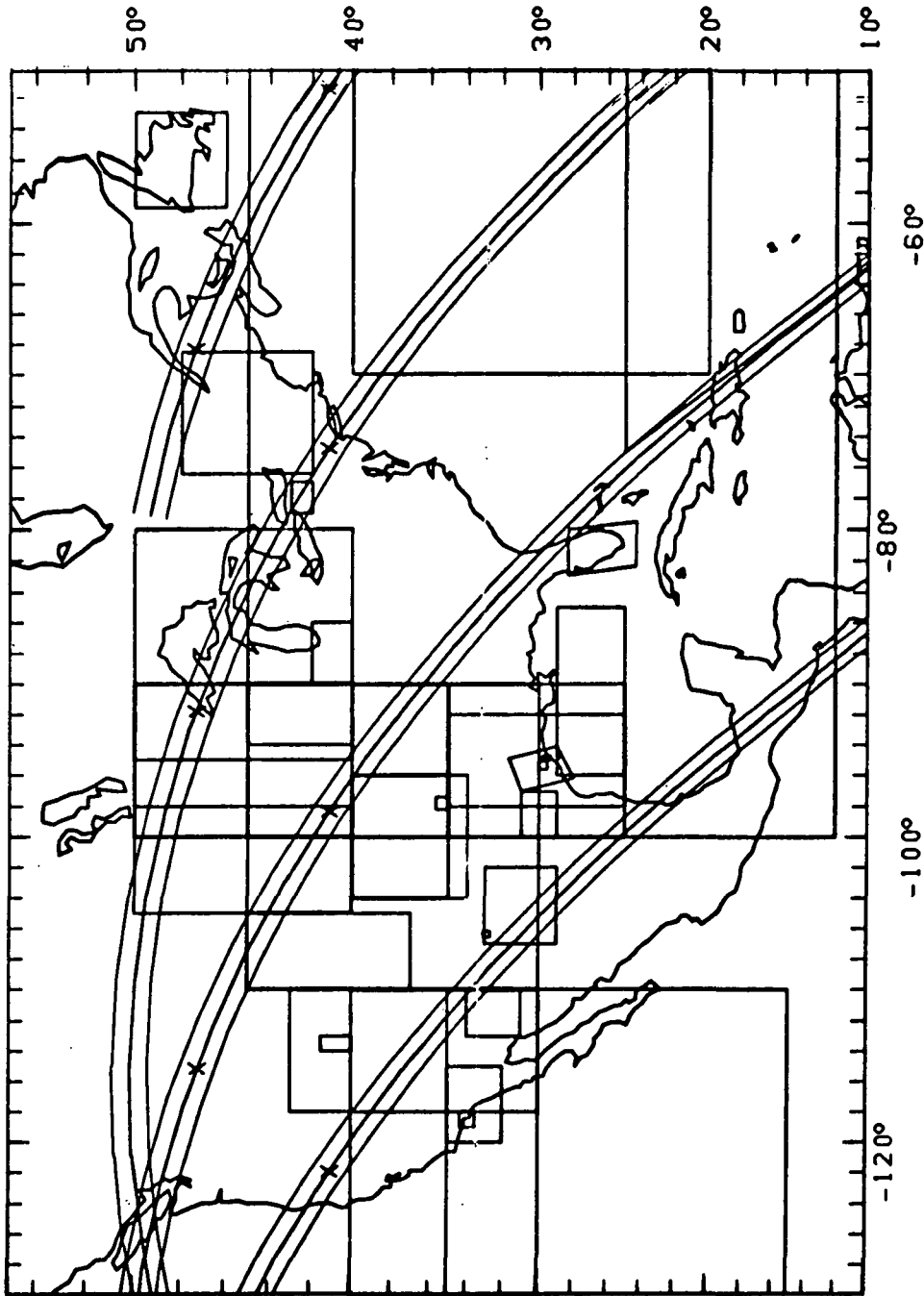
REV 2857-59 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



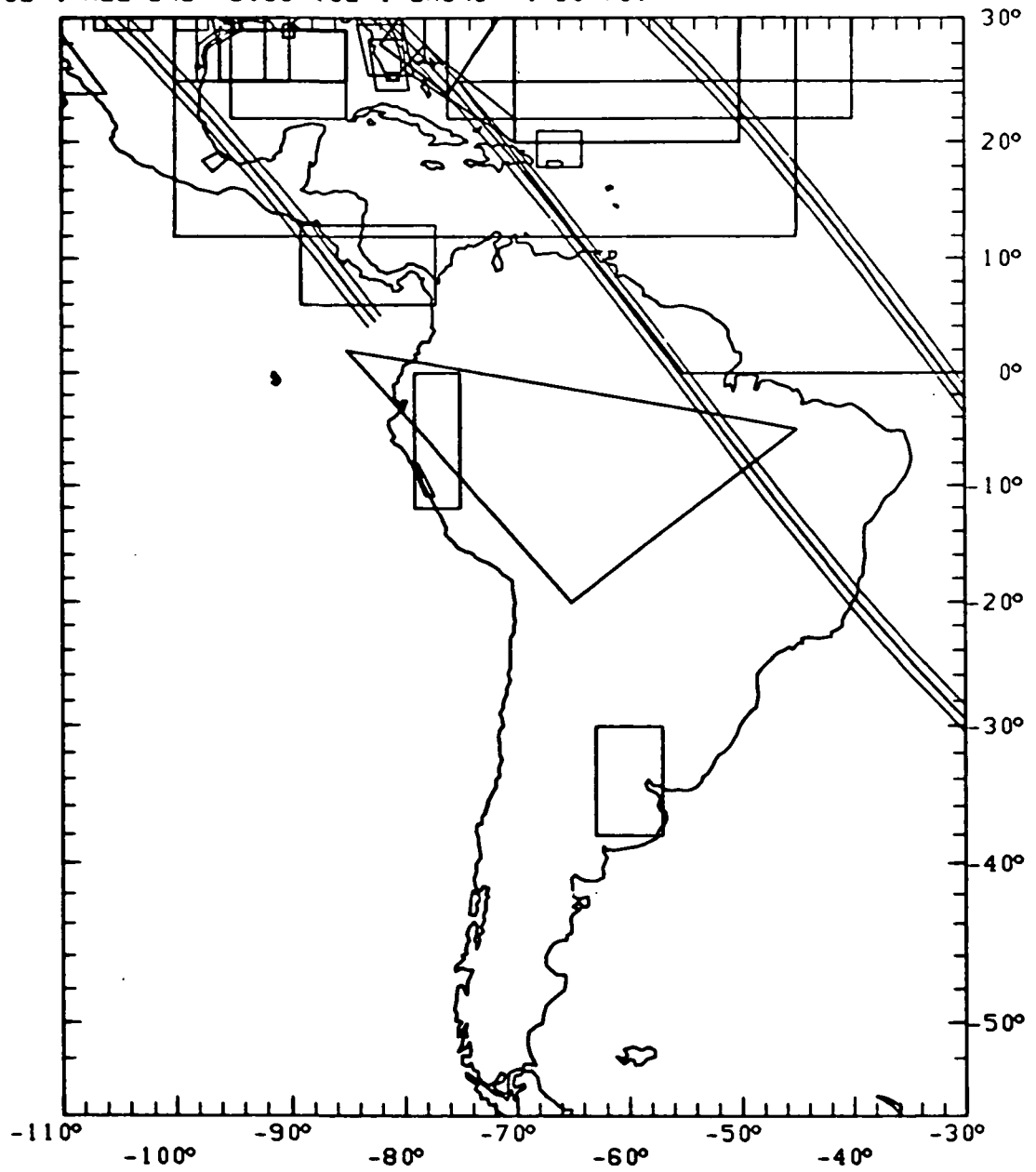
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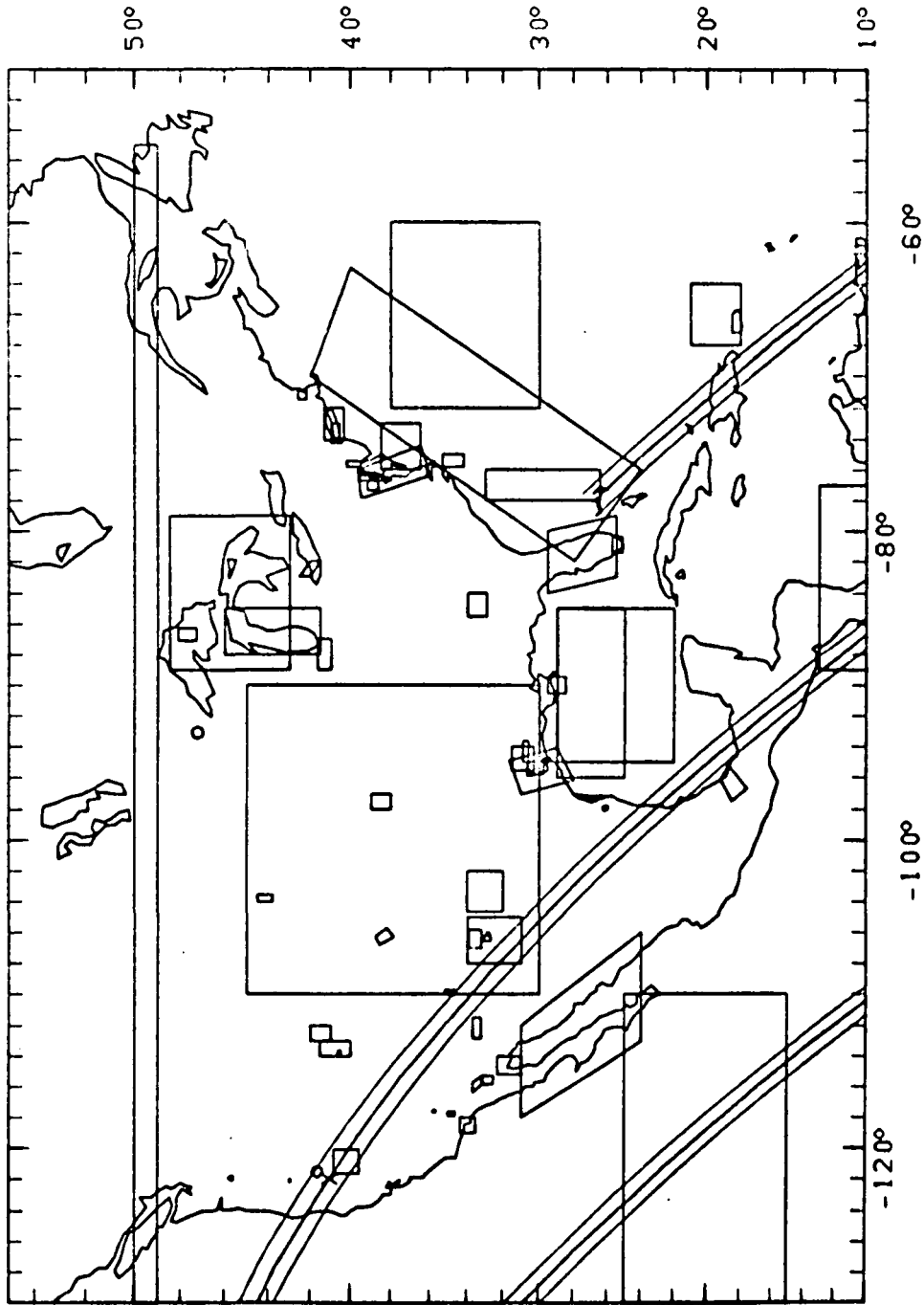
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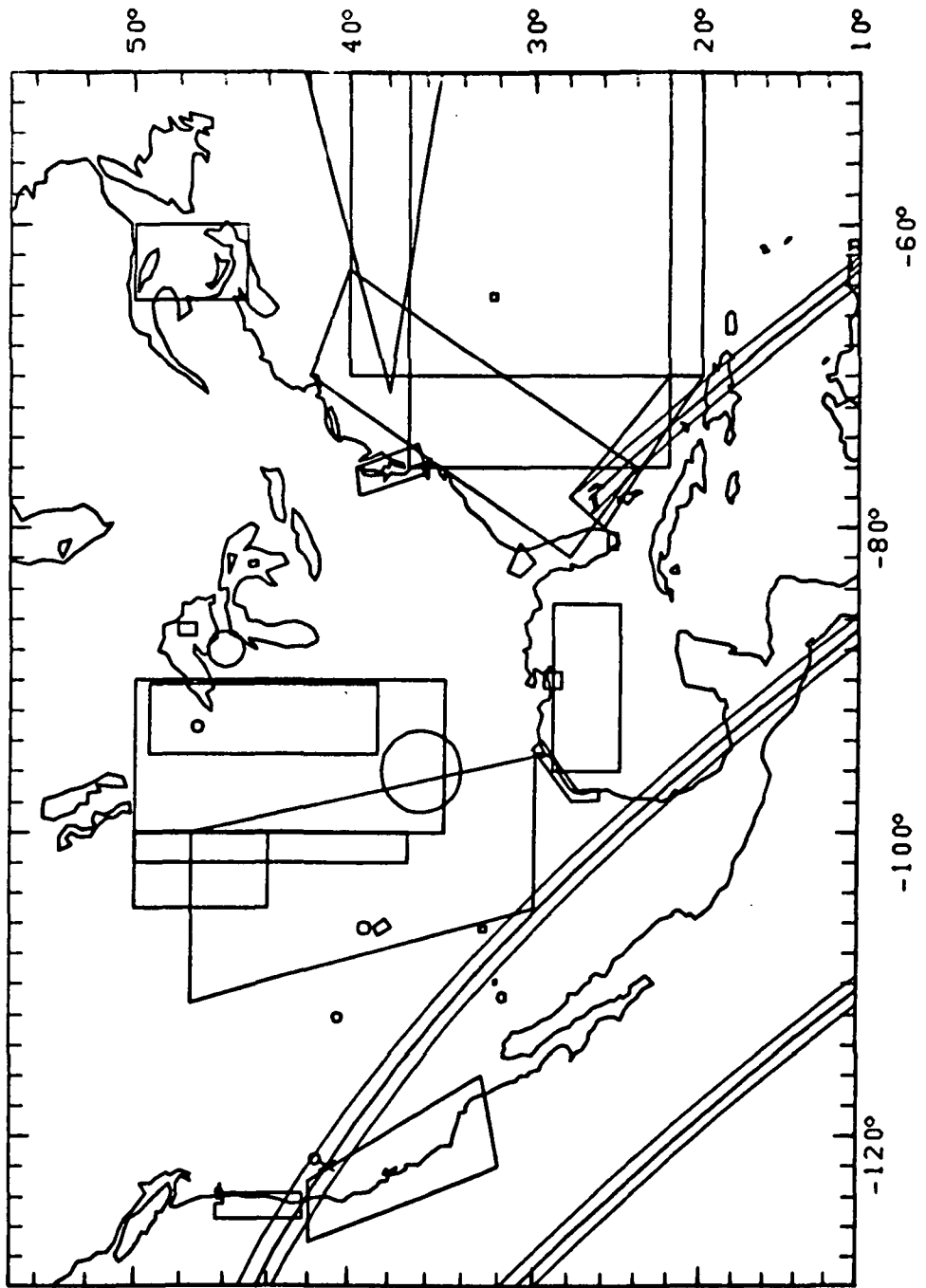
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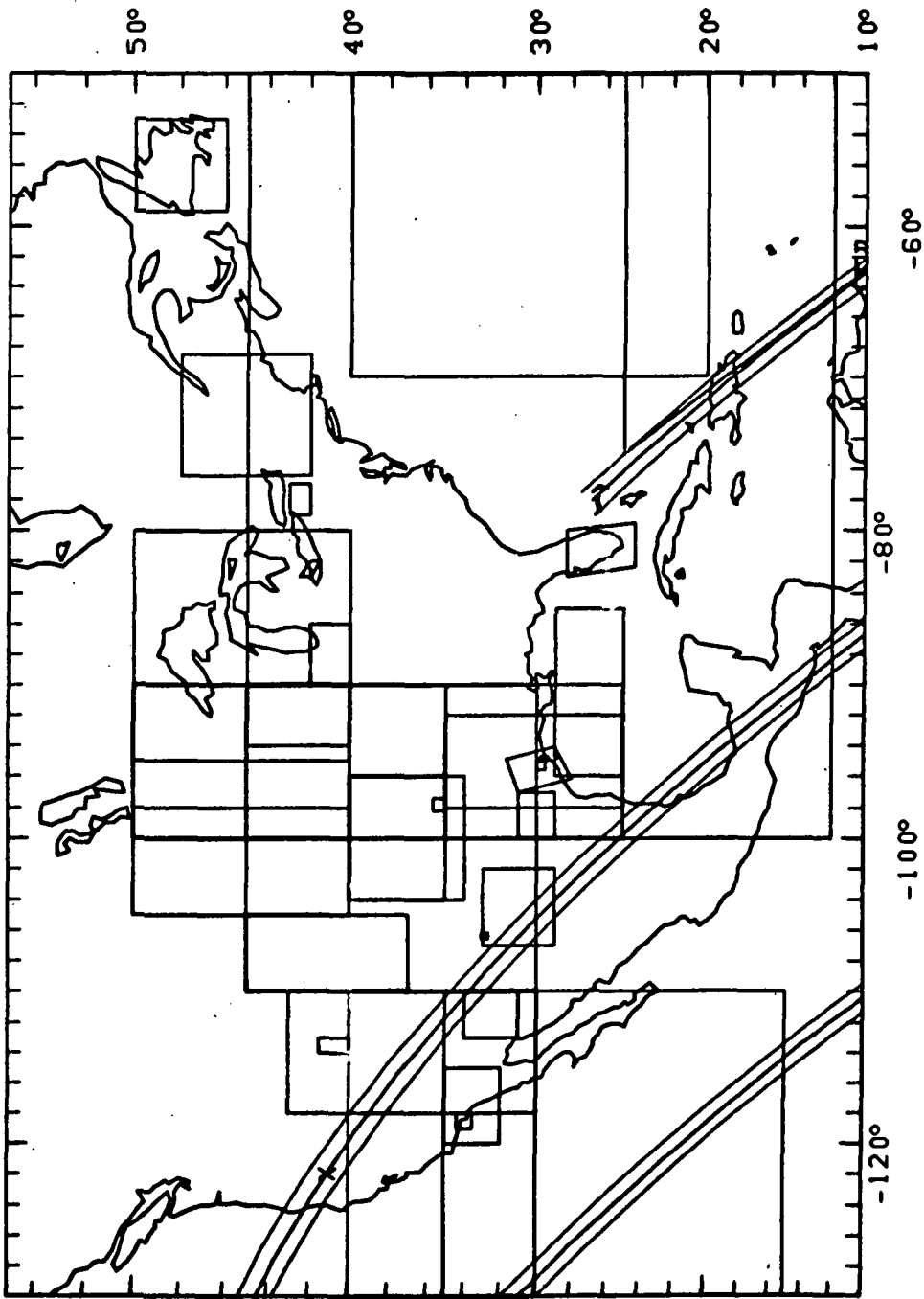
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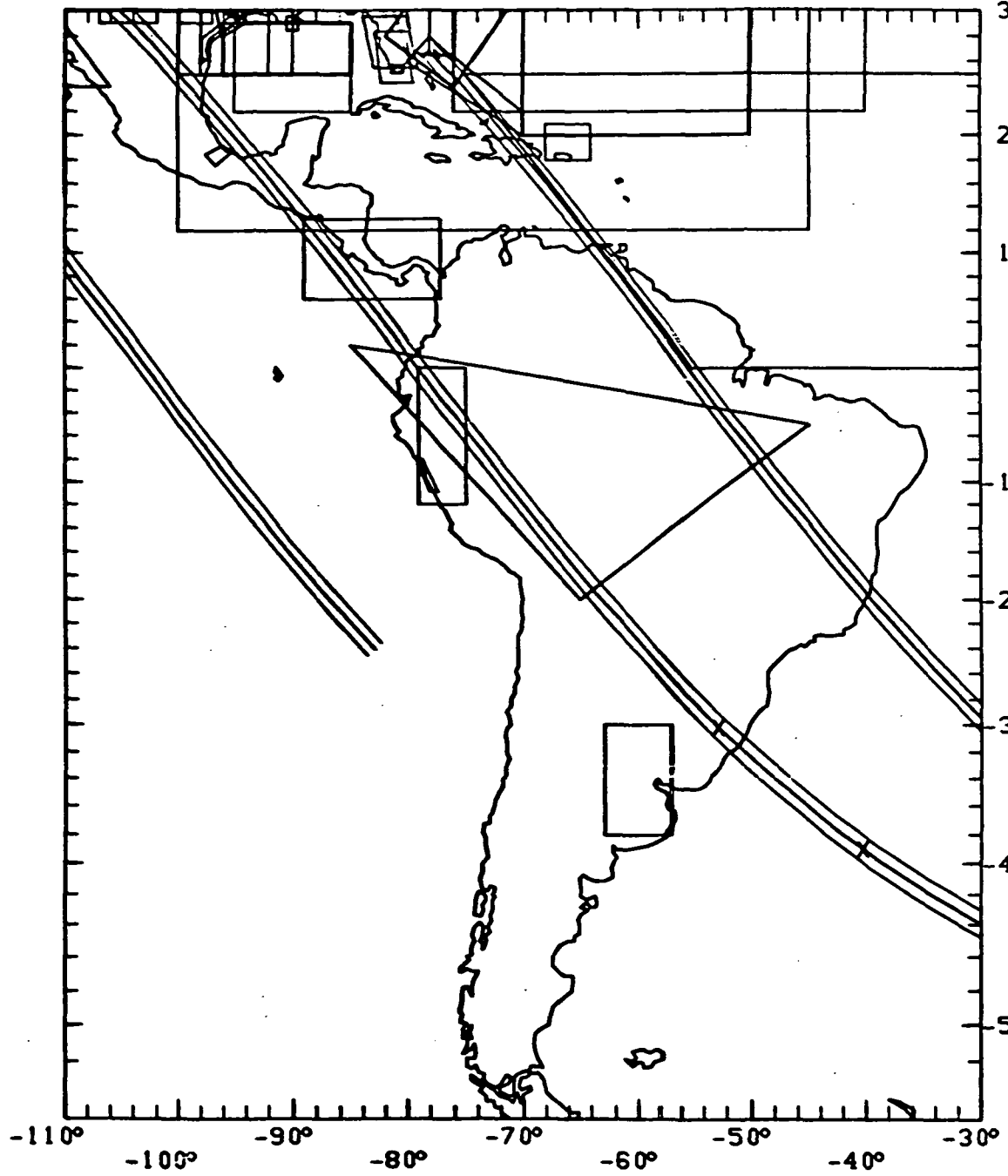
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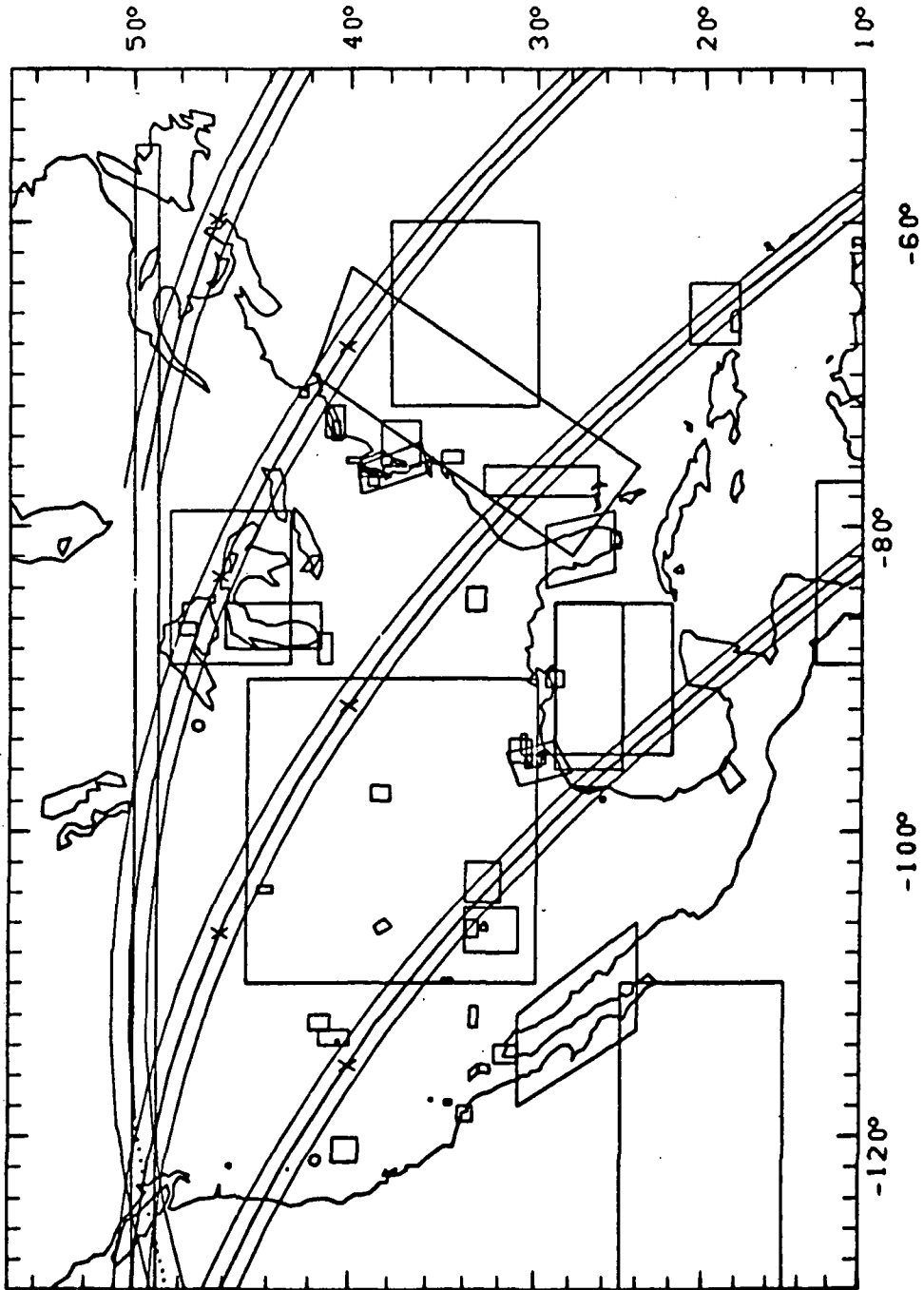
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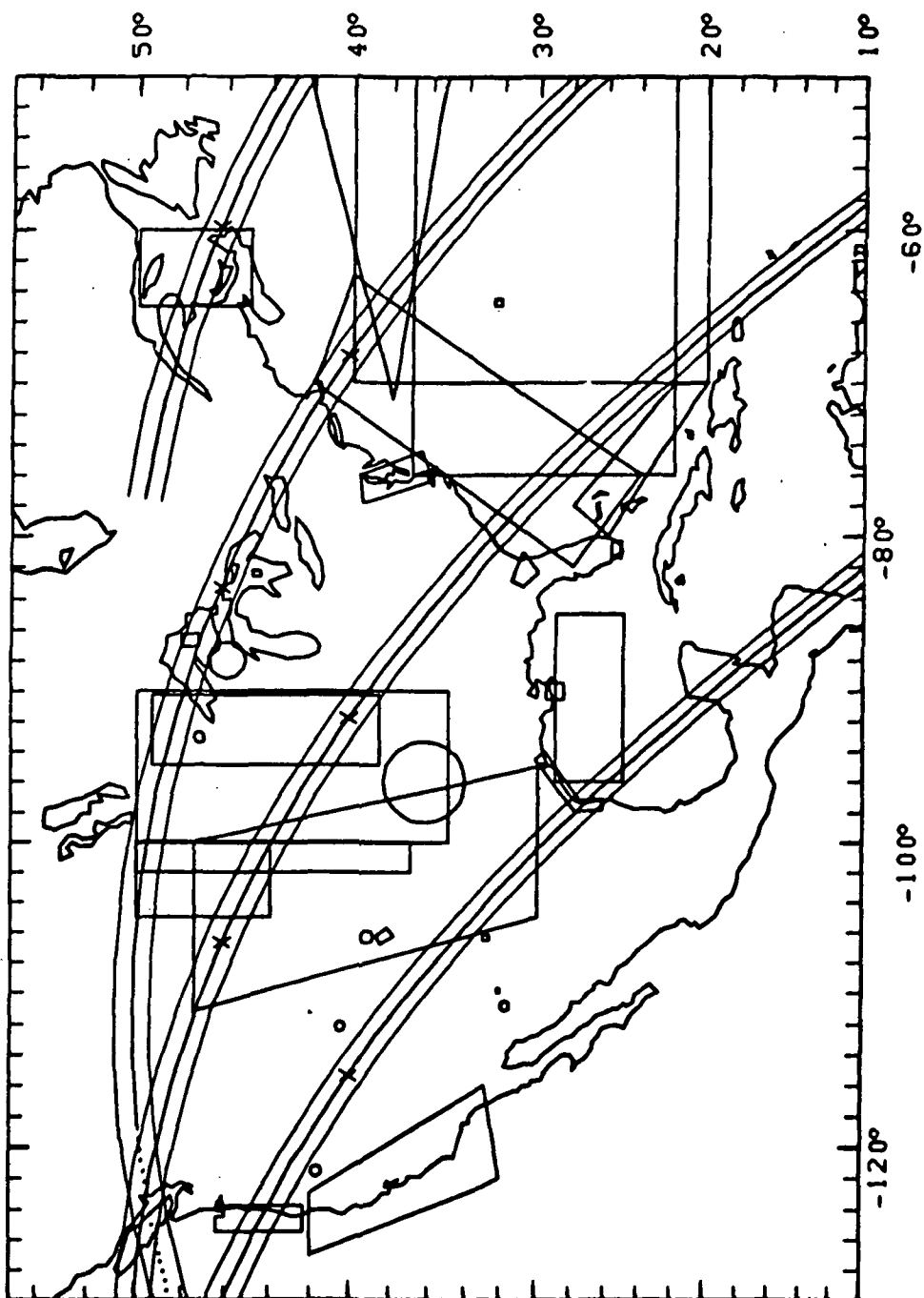
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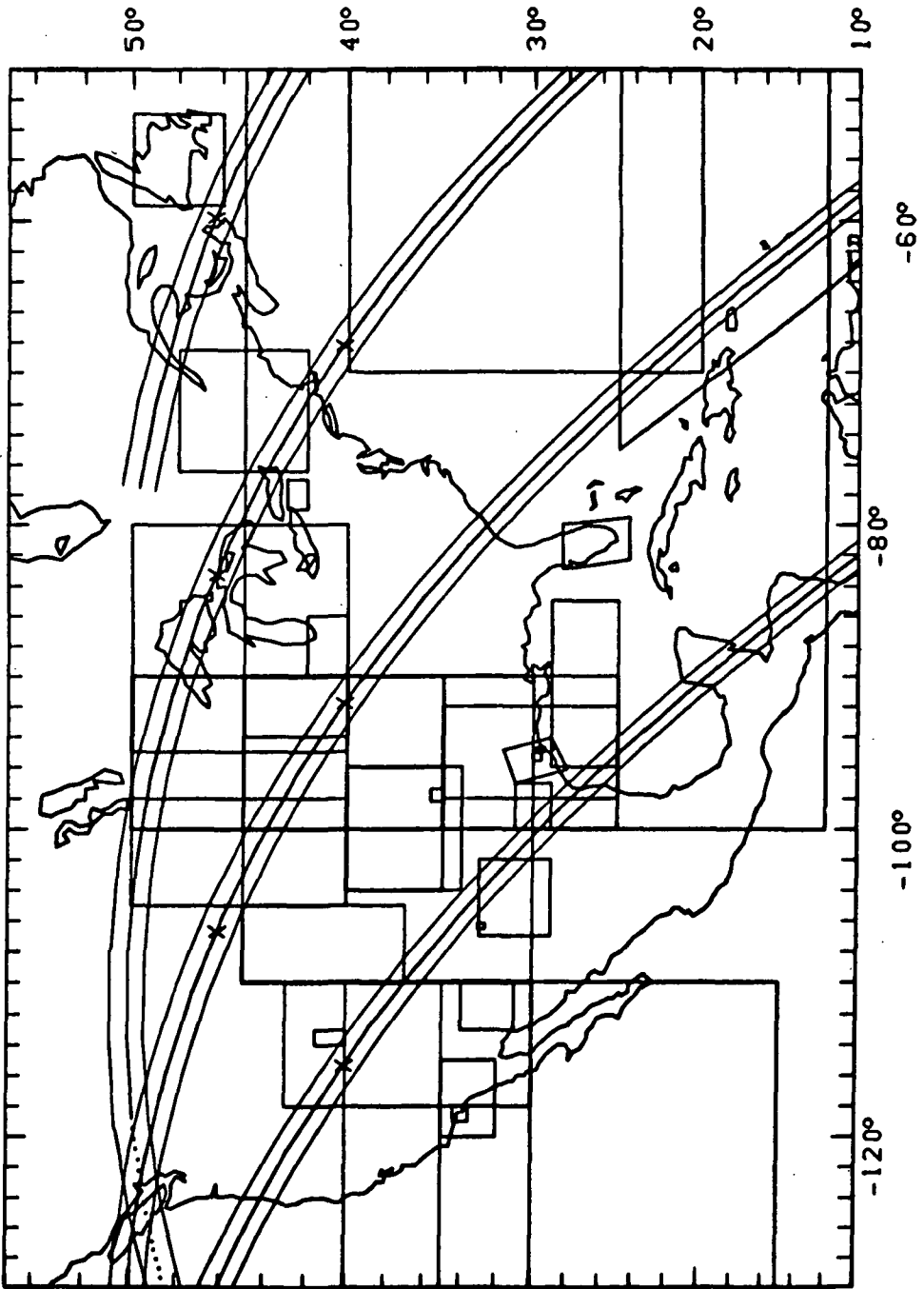
REV 2871-73 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



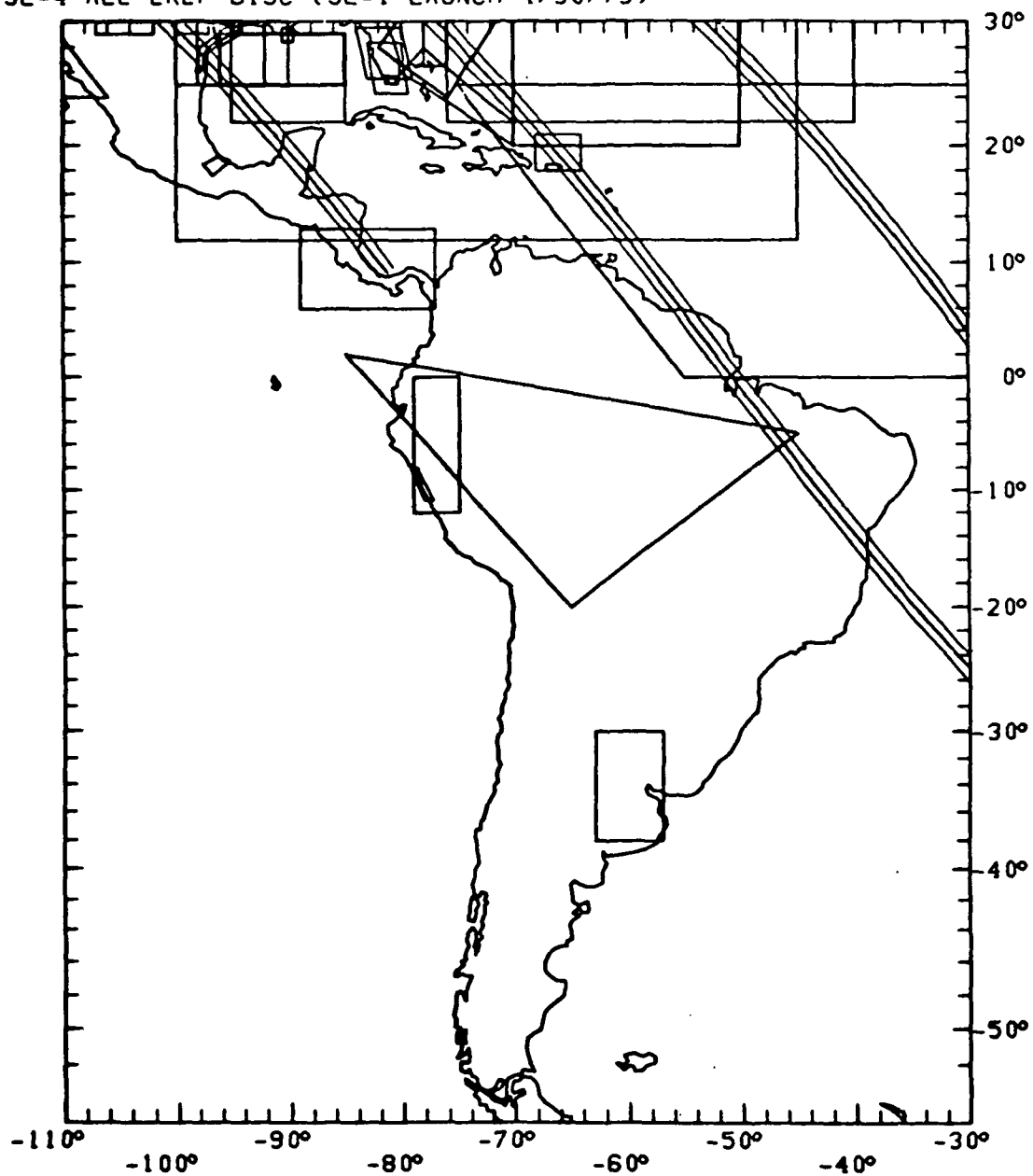
REV 2871-73 SL-4 EREP H.G.O (SL-1 LAUNCH 4/30/73)



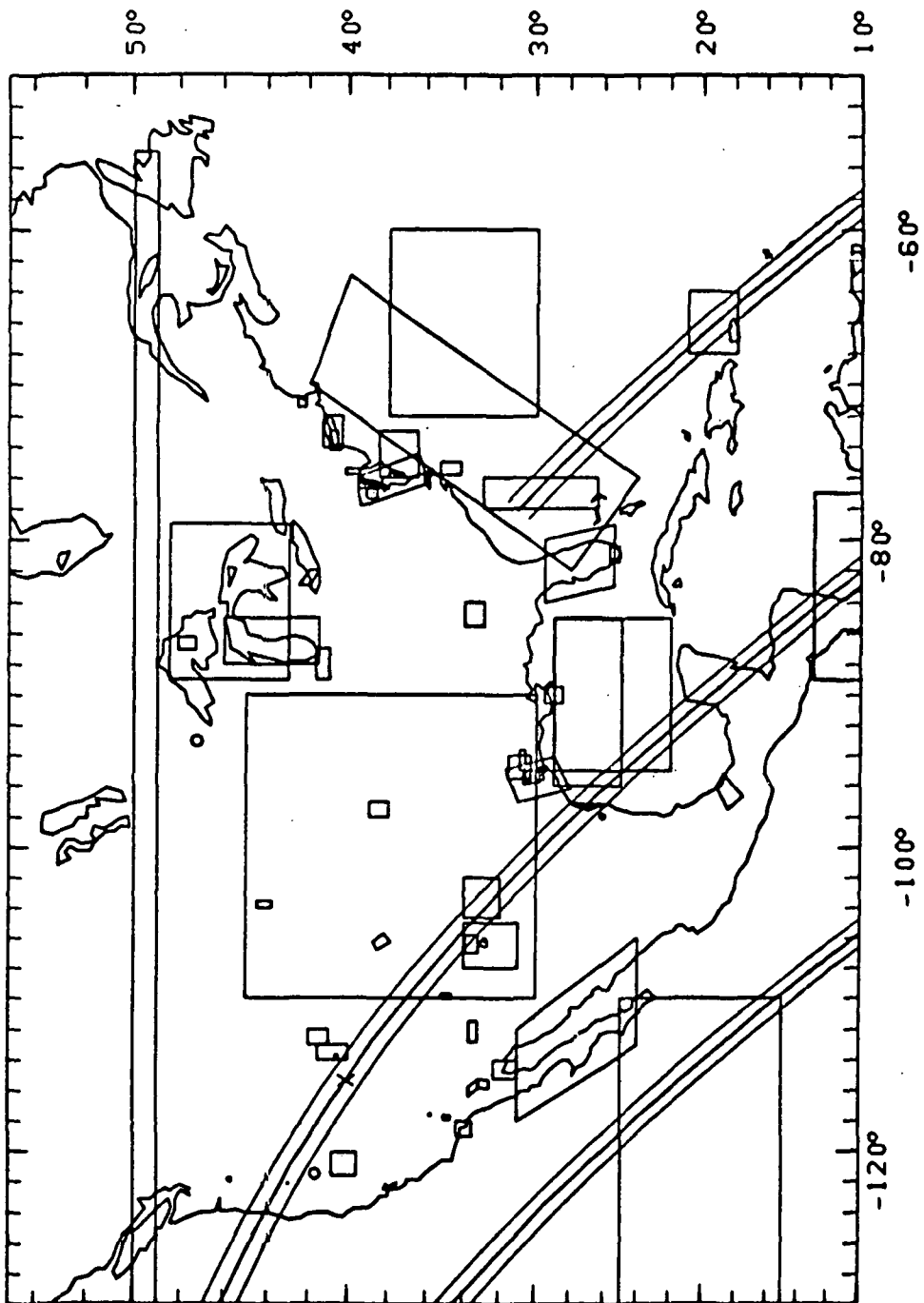
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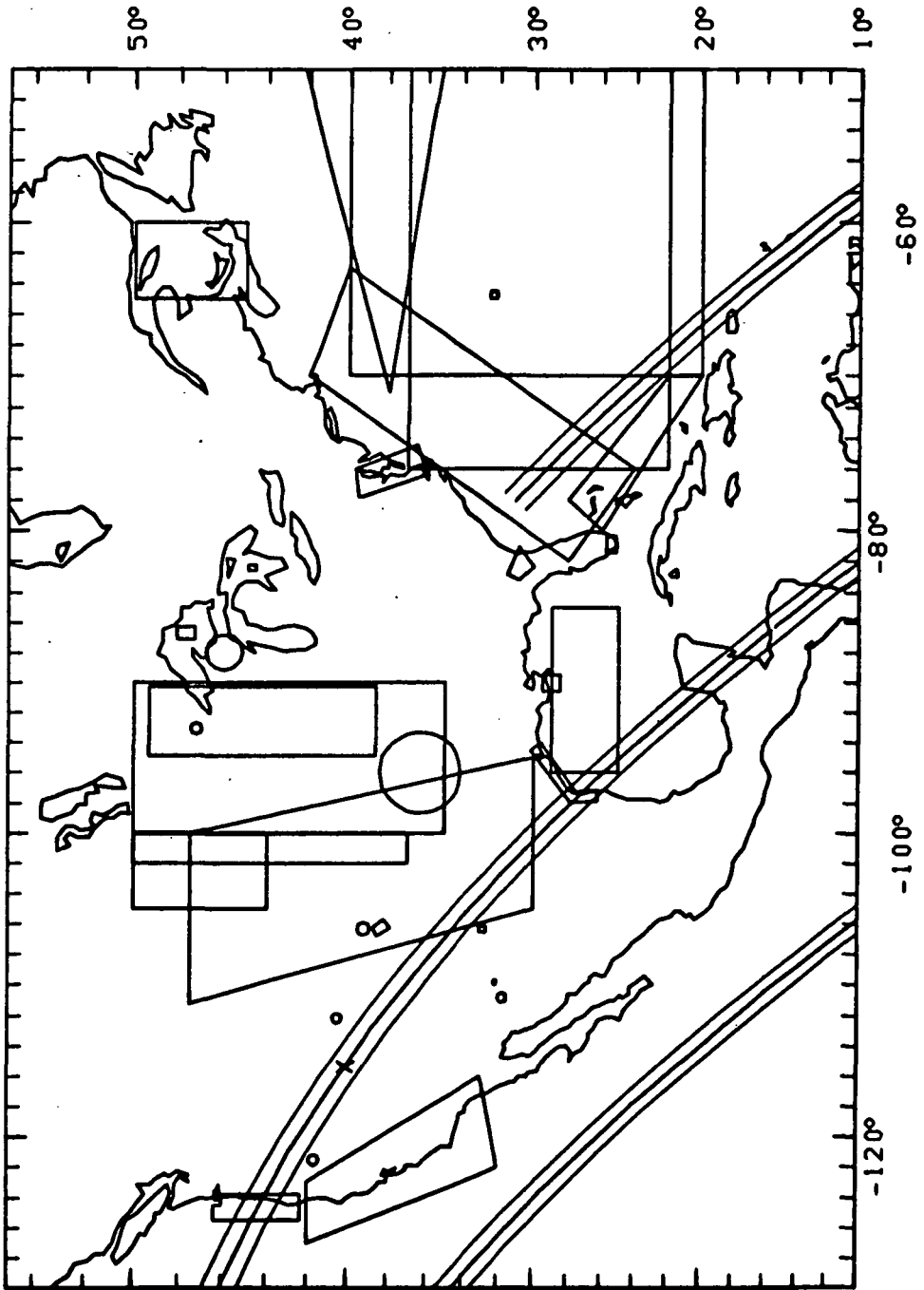
REV 2872-73 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



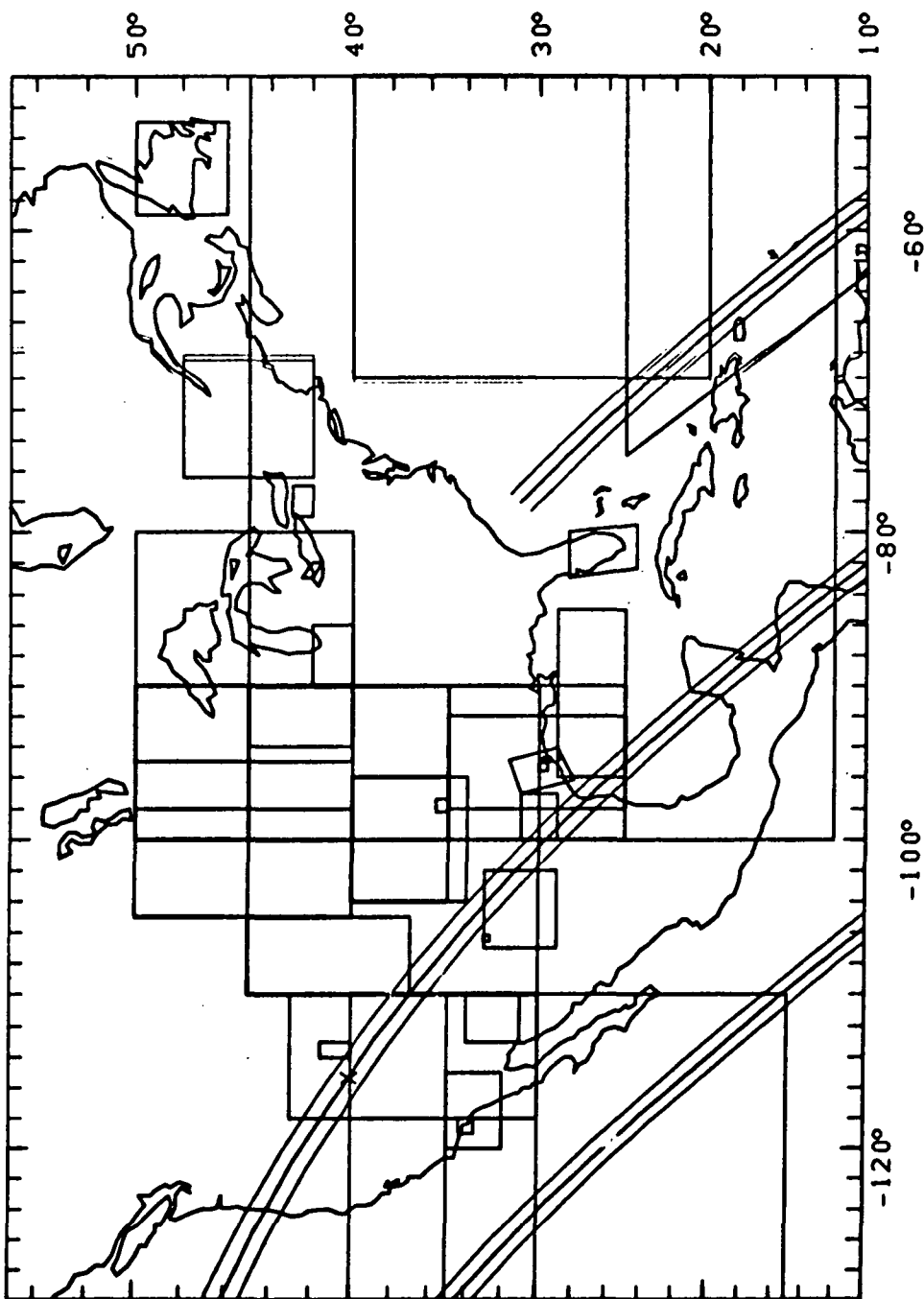
REV 2873-74 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



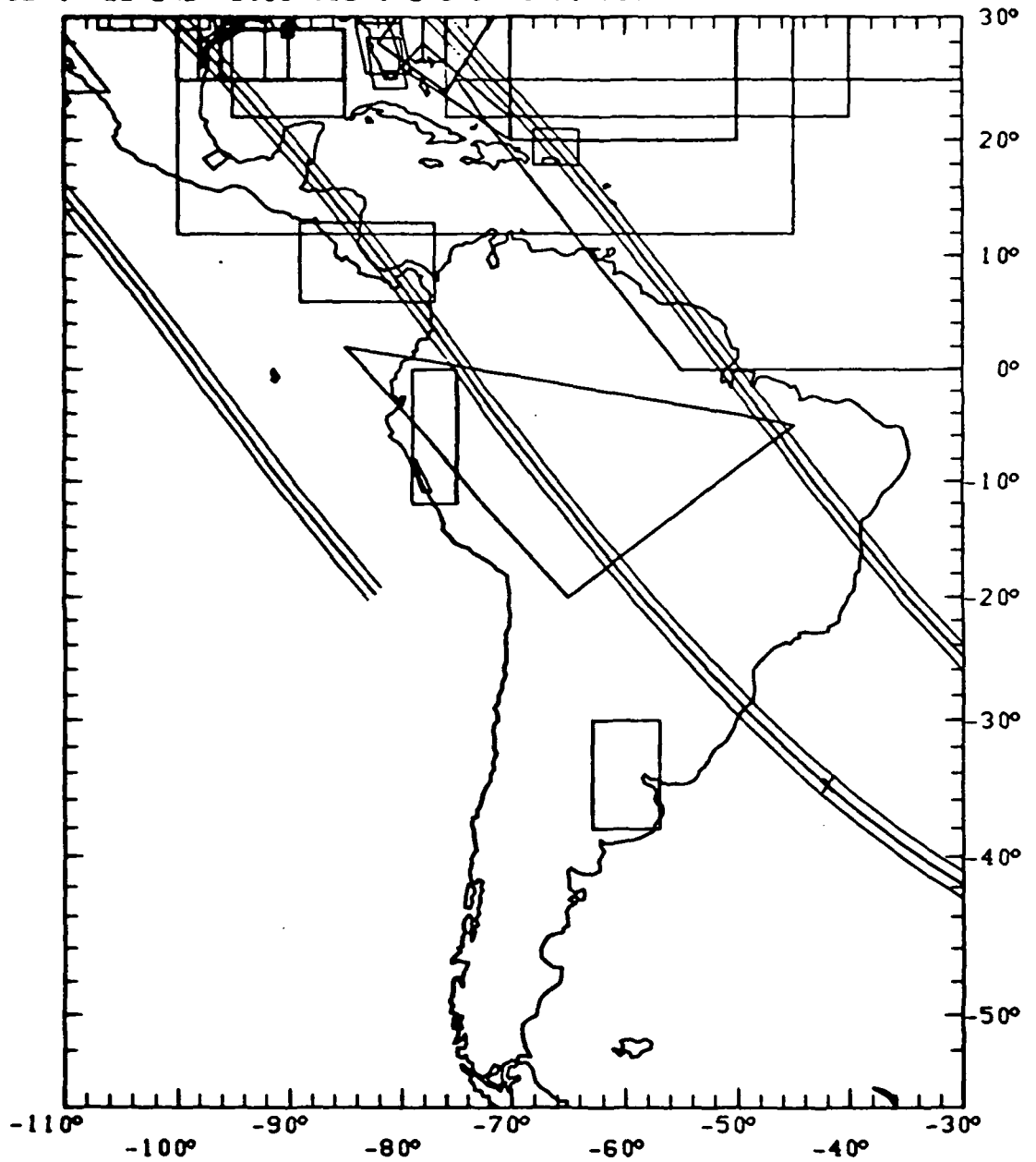
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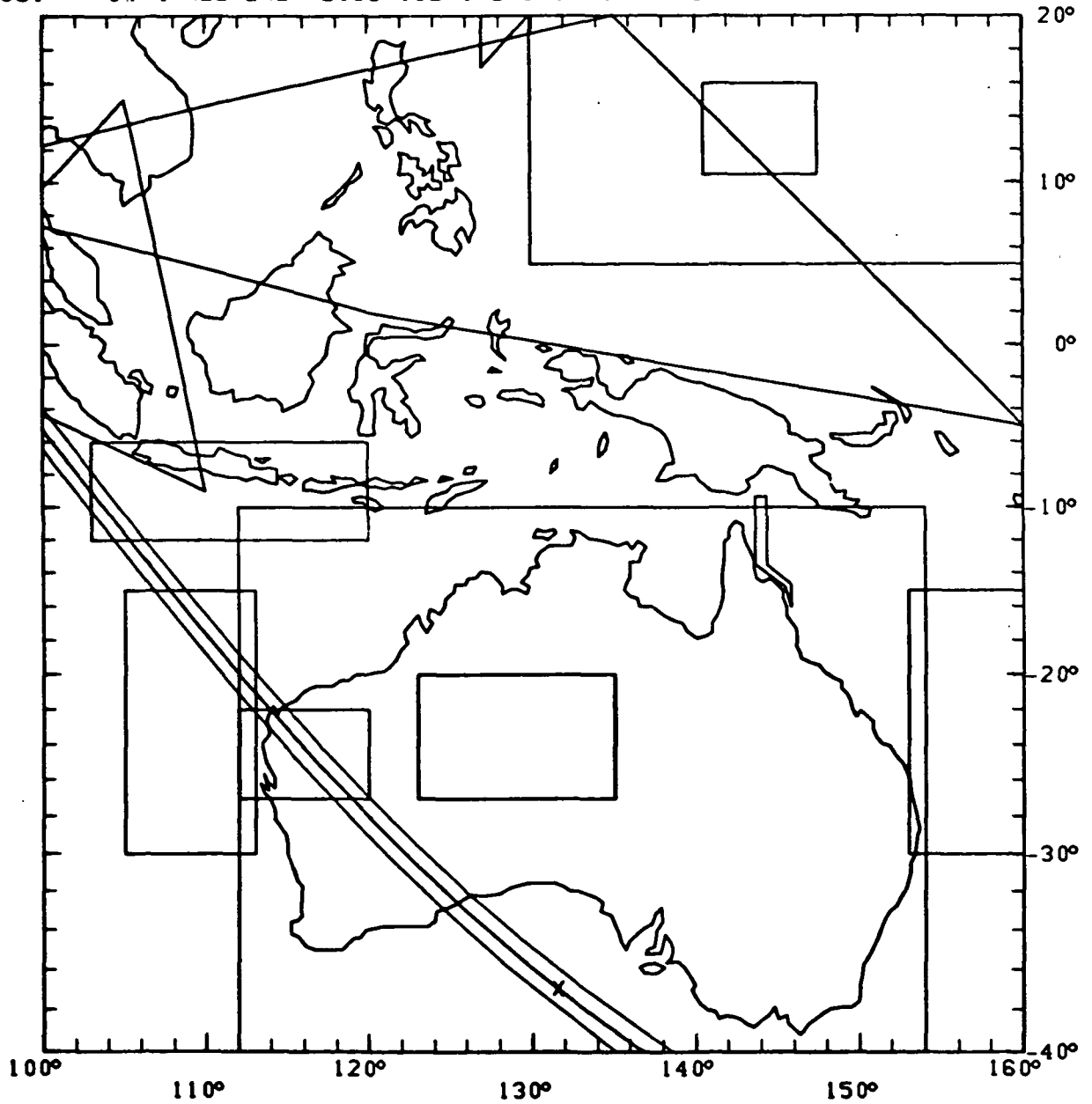
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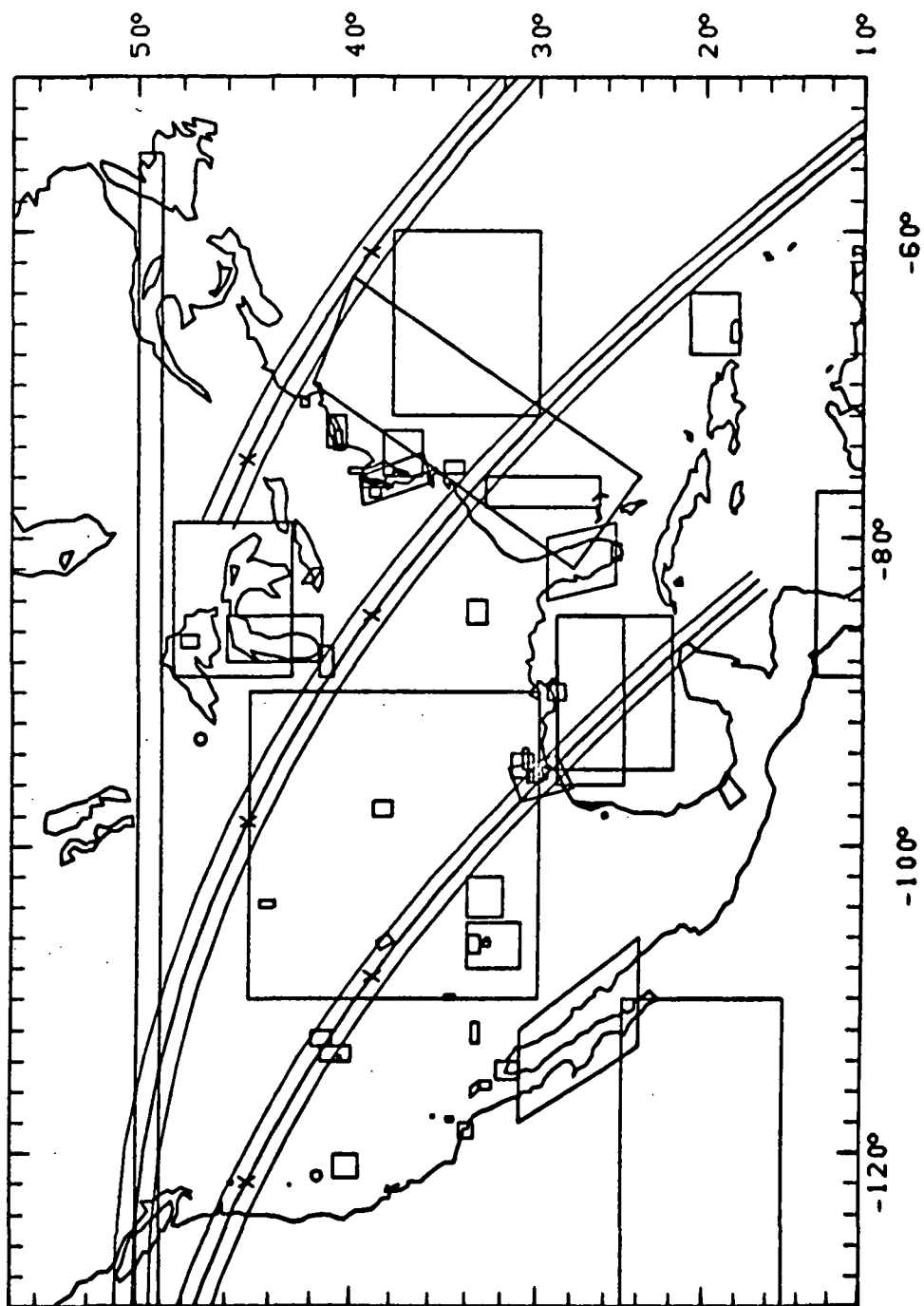
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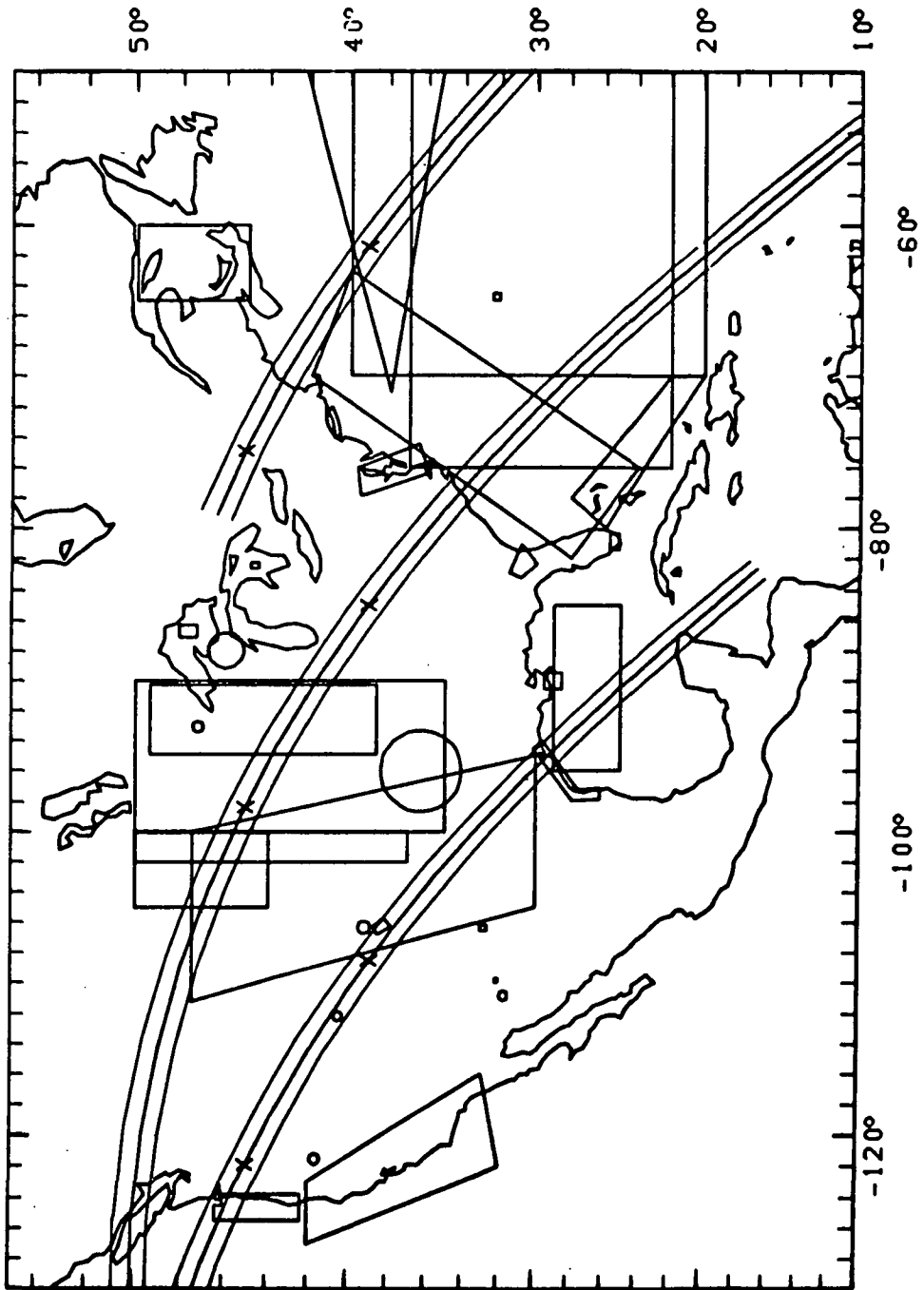
REV 2881 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



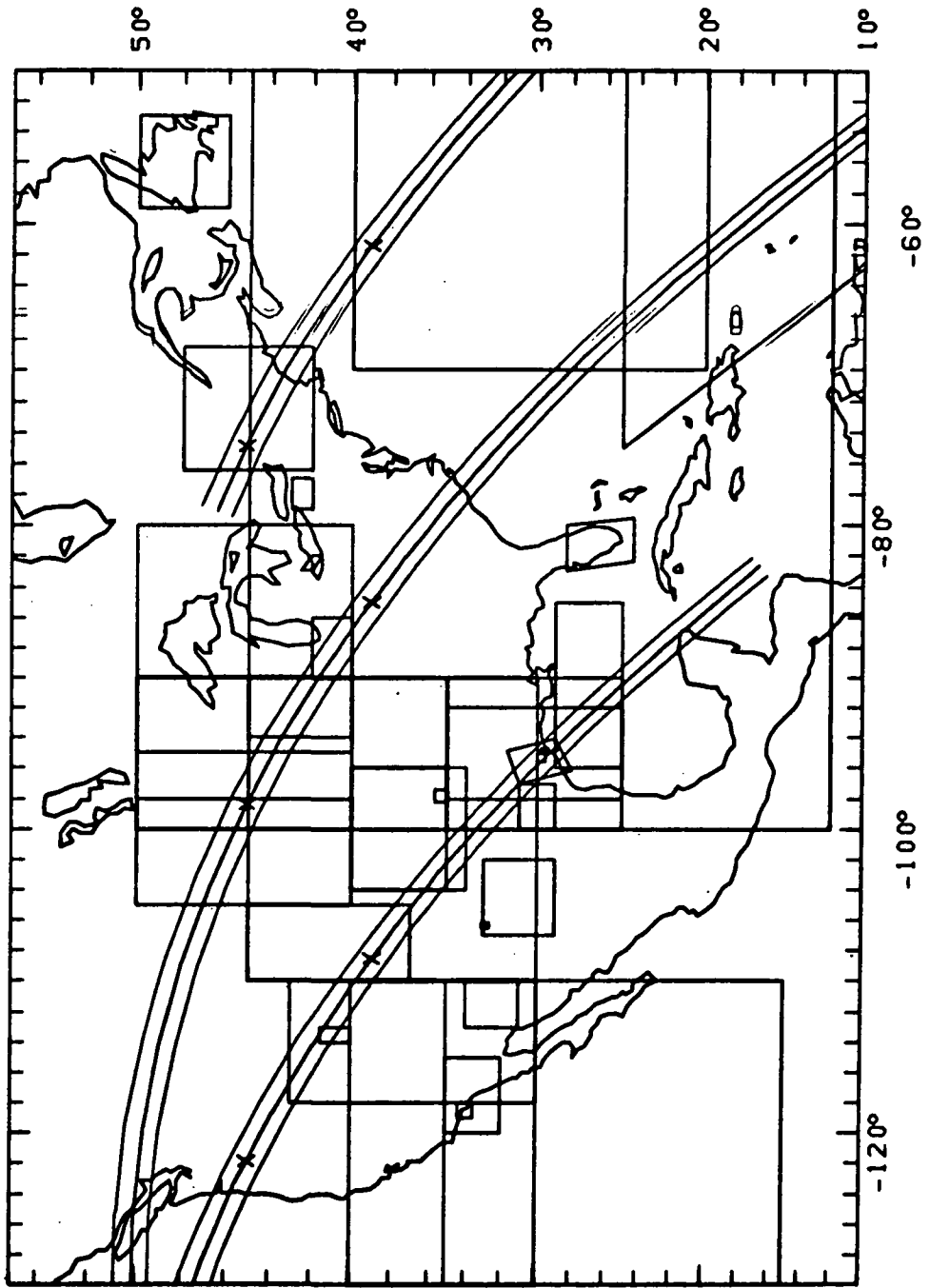
REV 2886-87 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



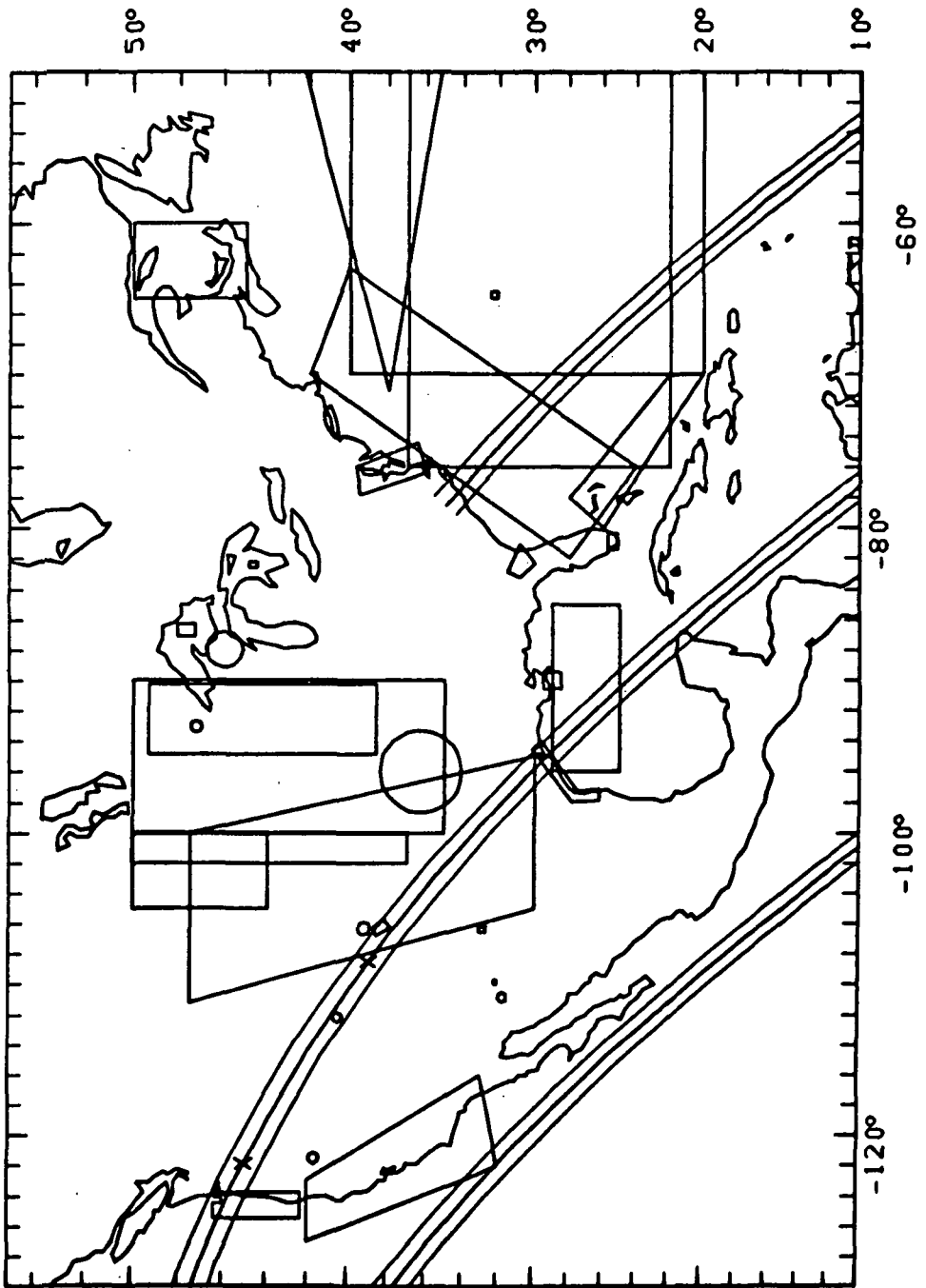
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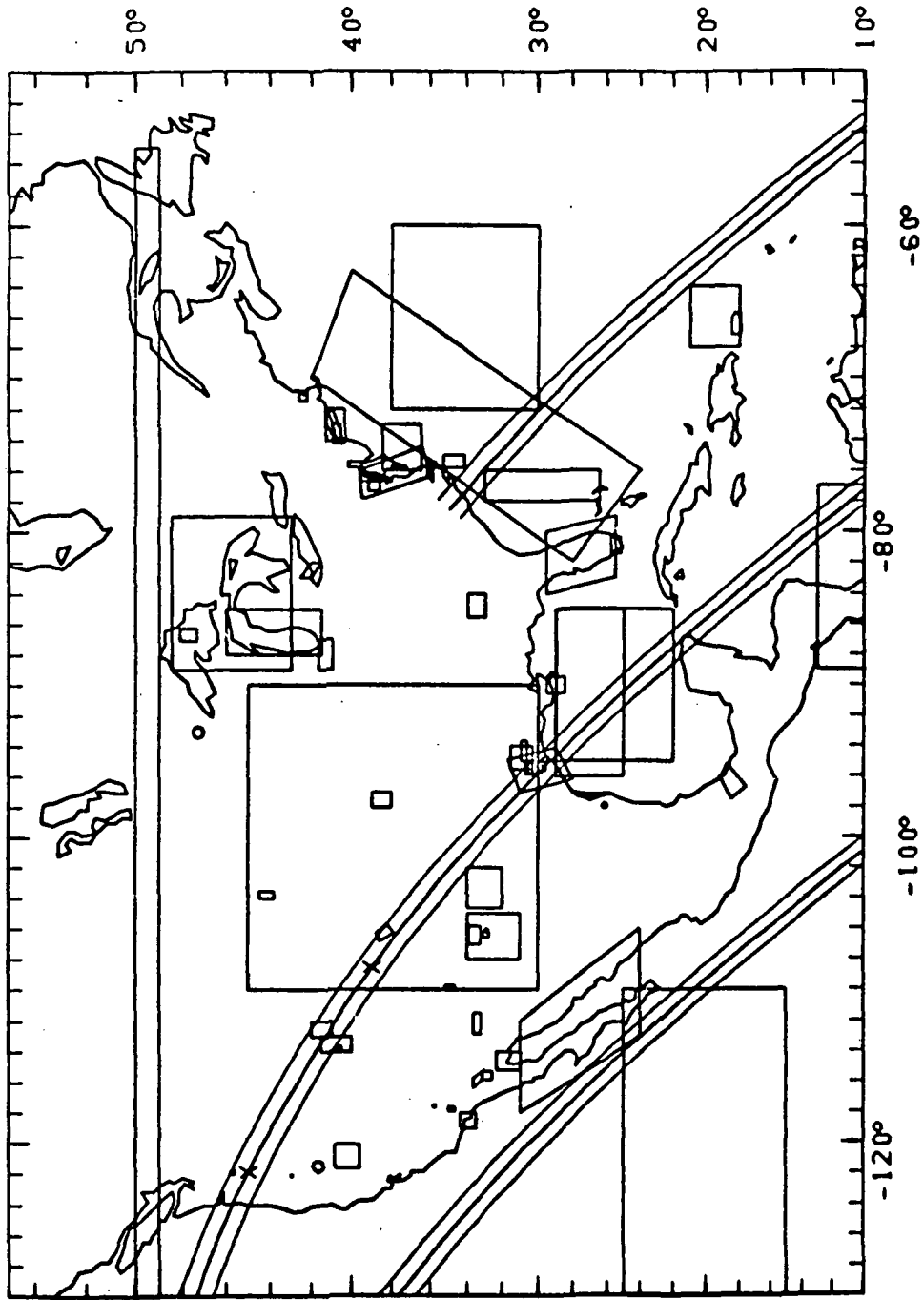
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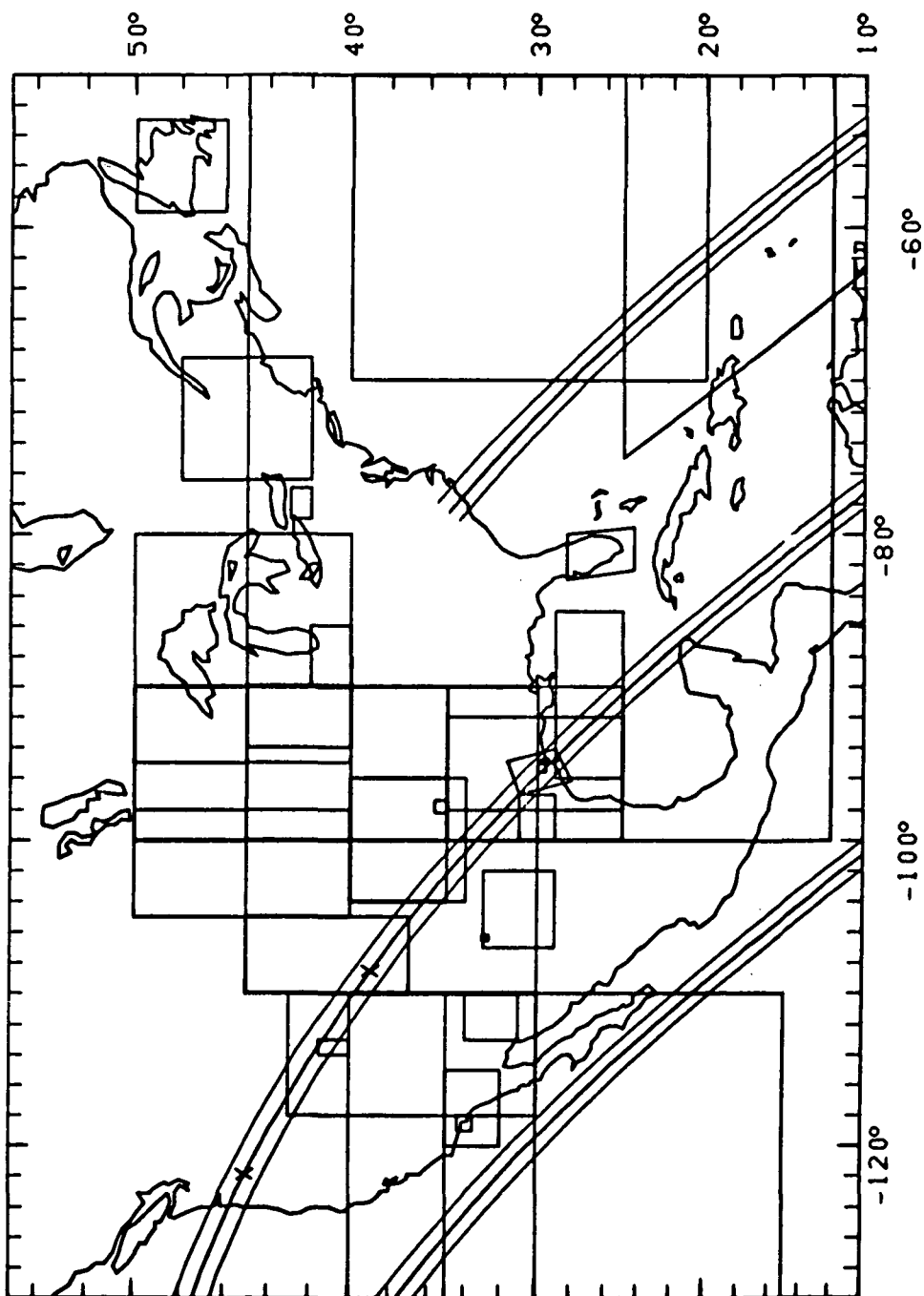
REV 2887-88 SL-4 EREP H.G.O (SL-1 LAUNCH 4/30/73)



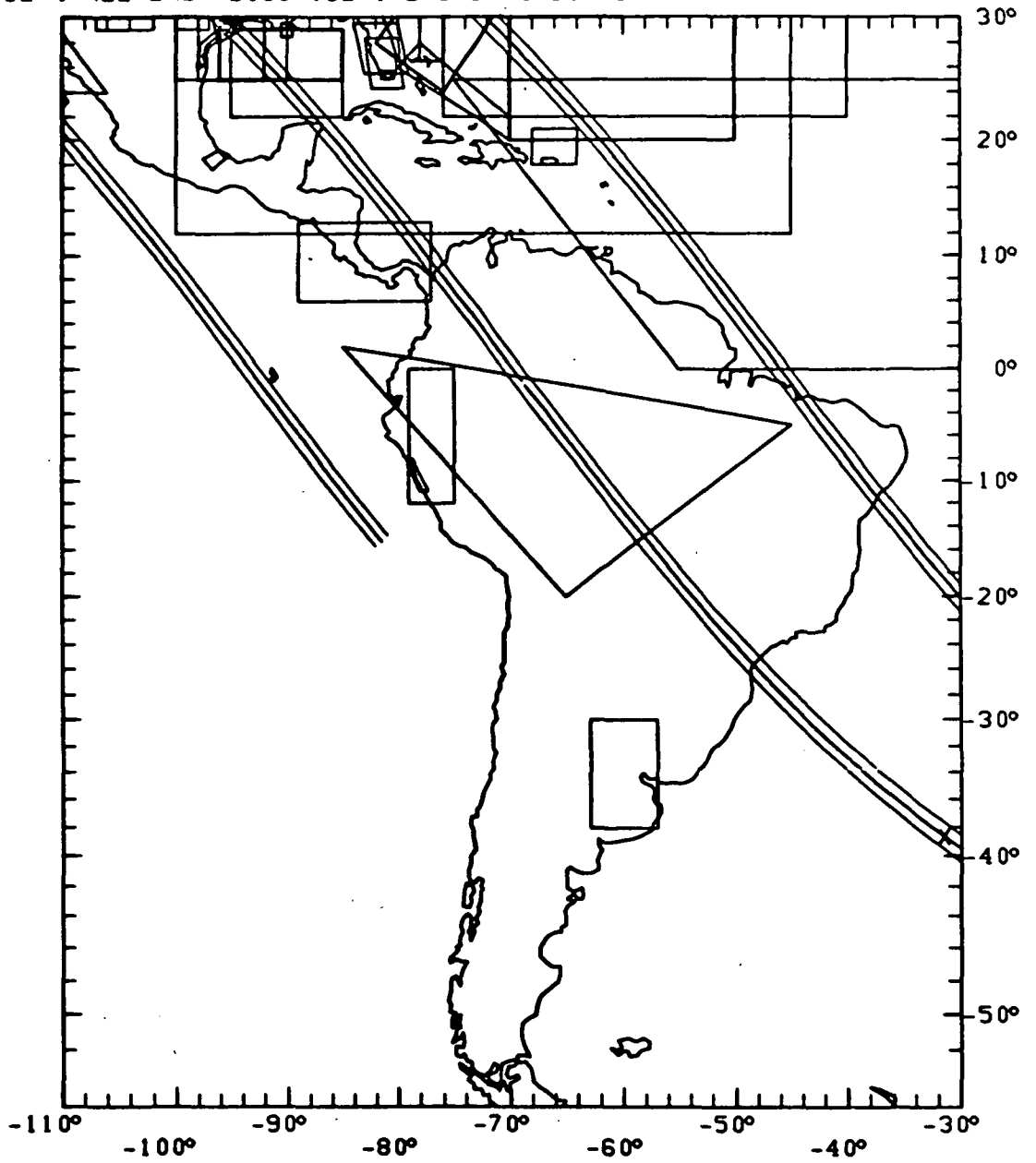
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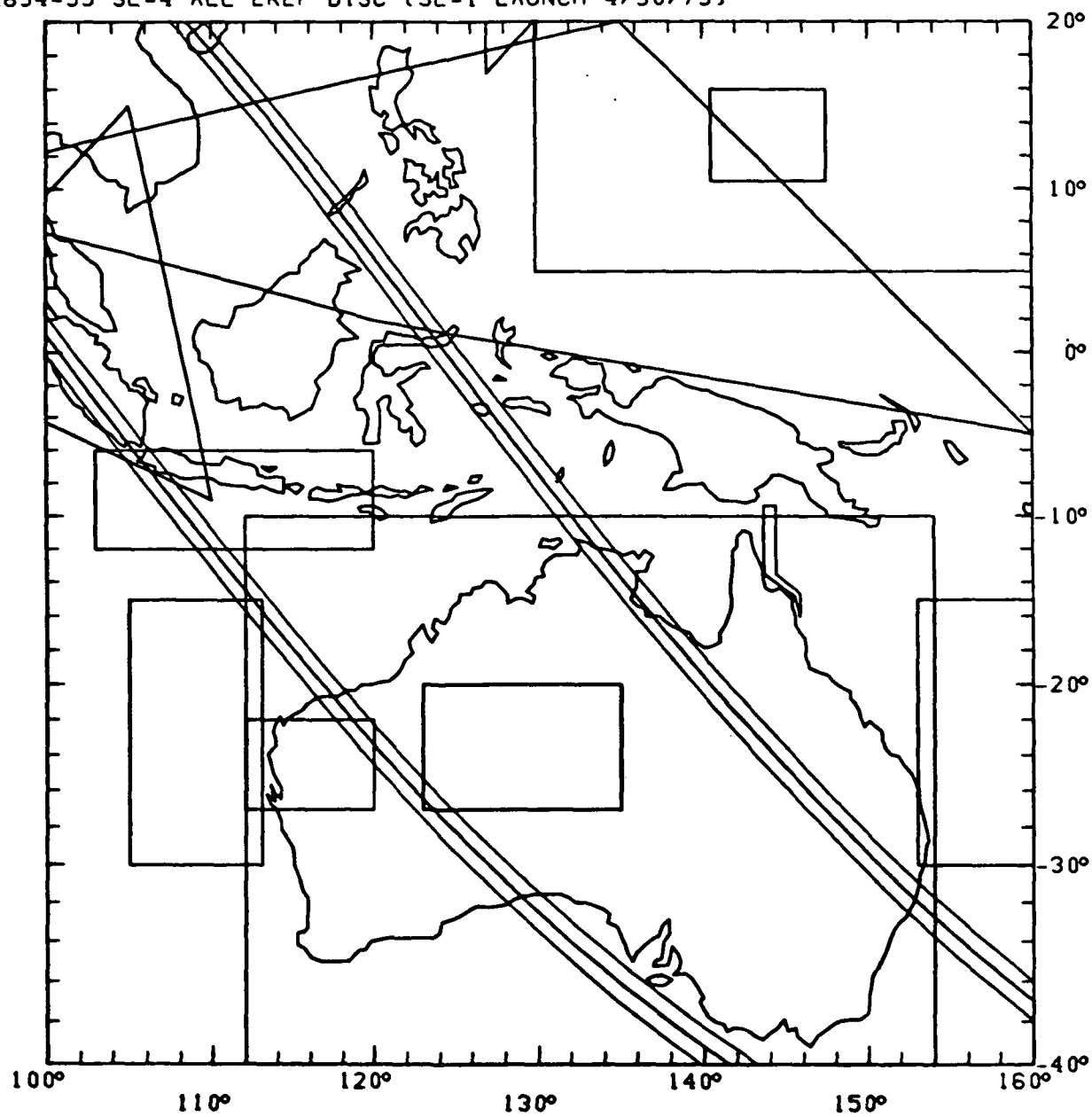
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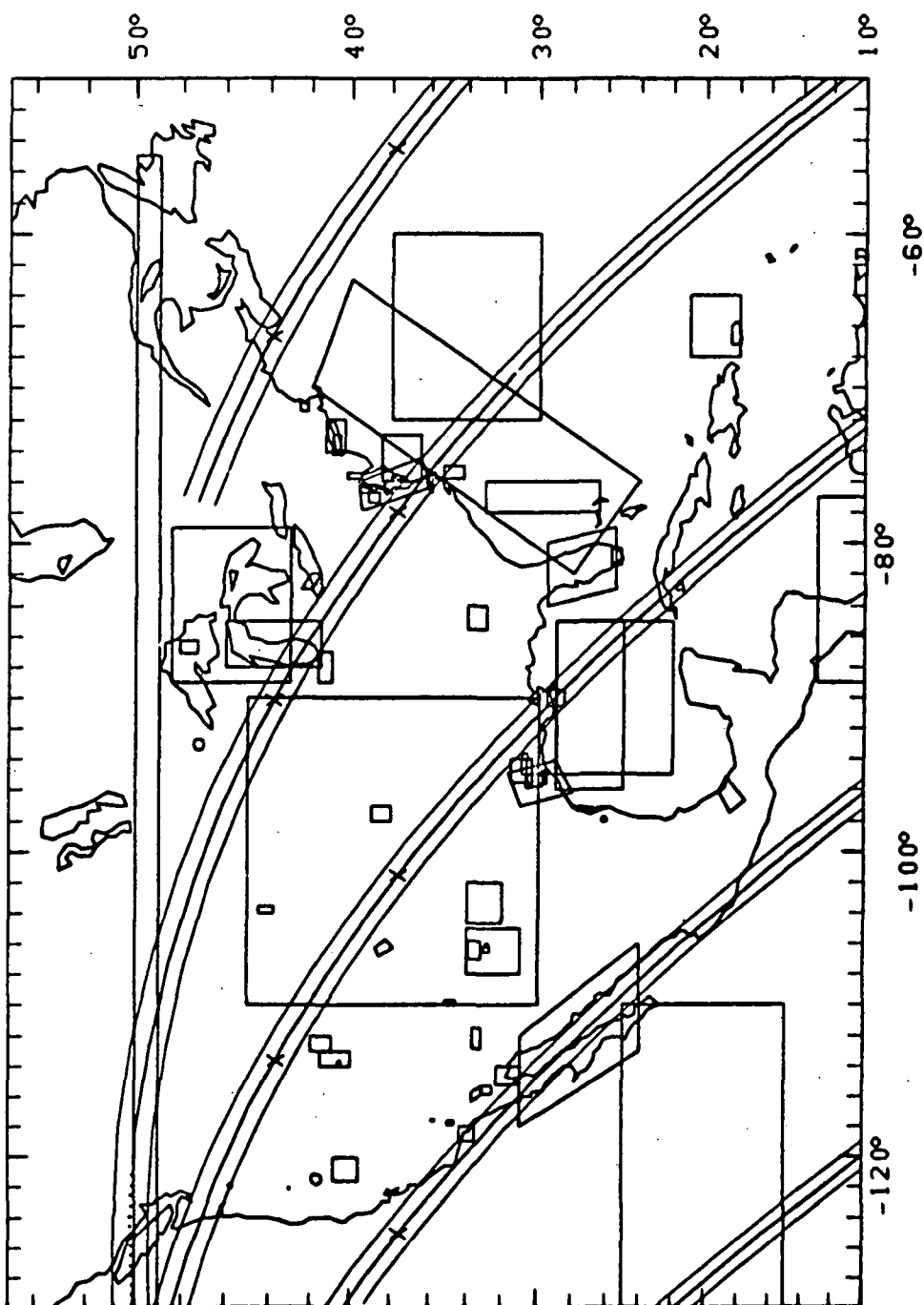
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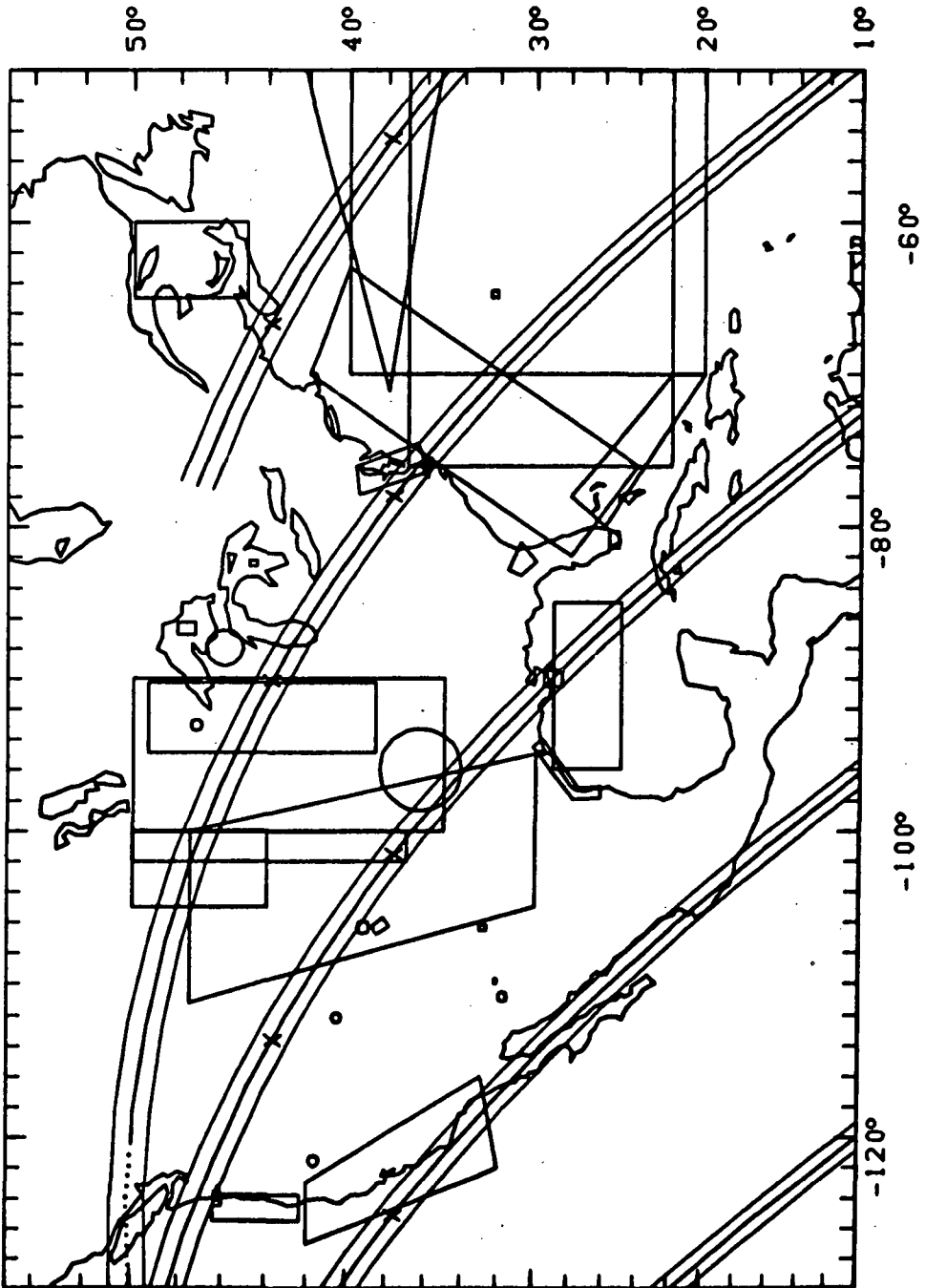
REV 2894-95 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



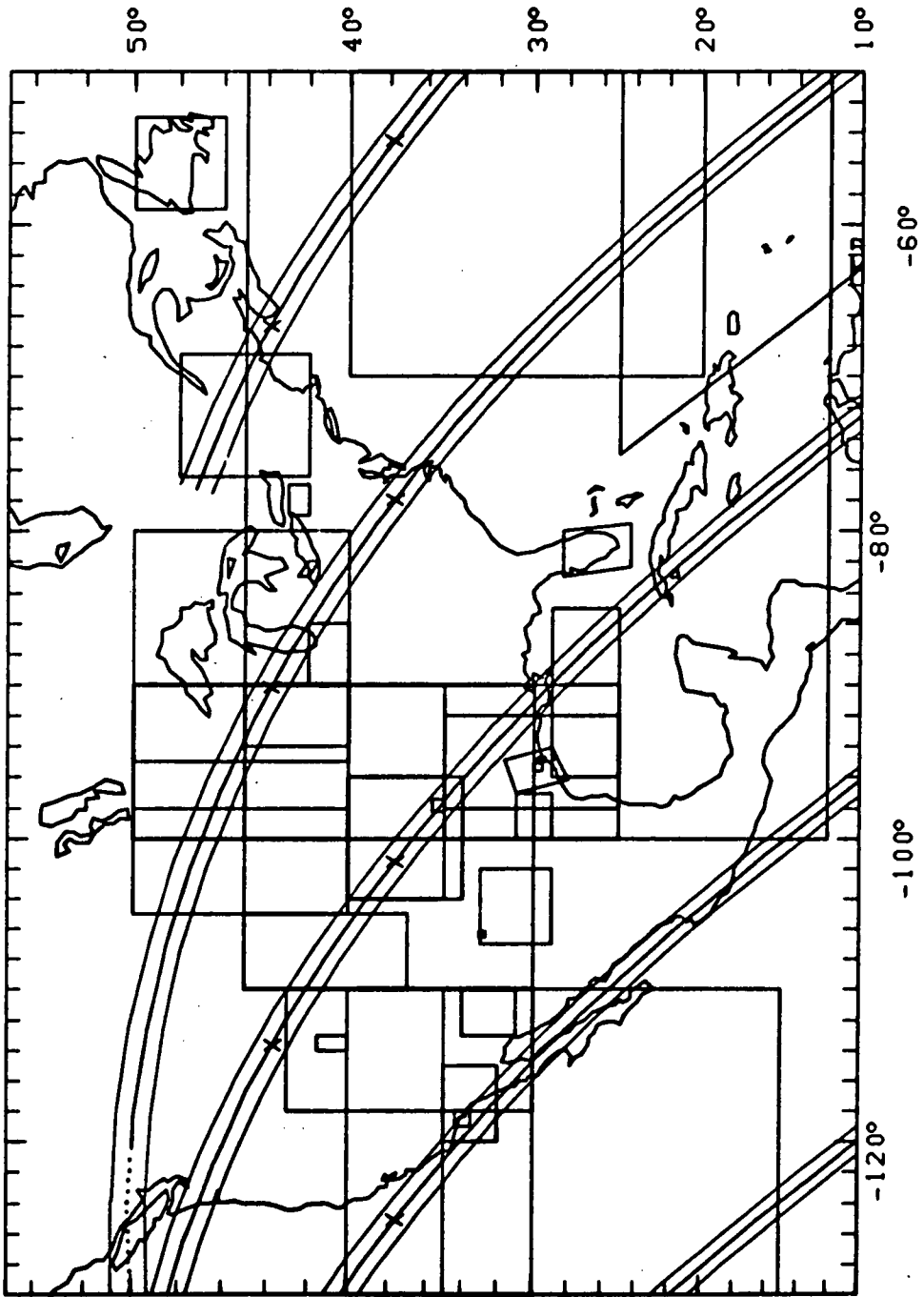
REV 2900-03 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



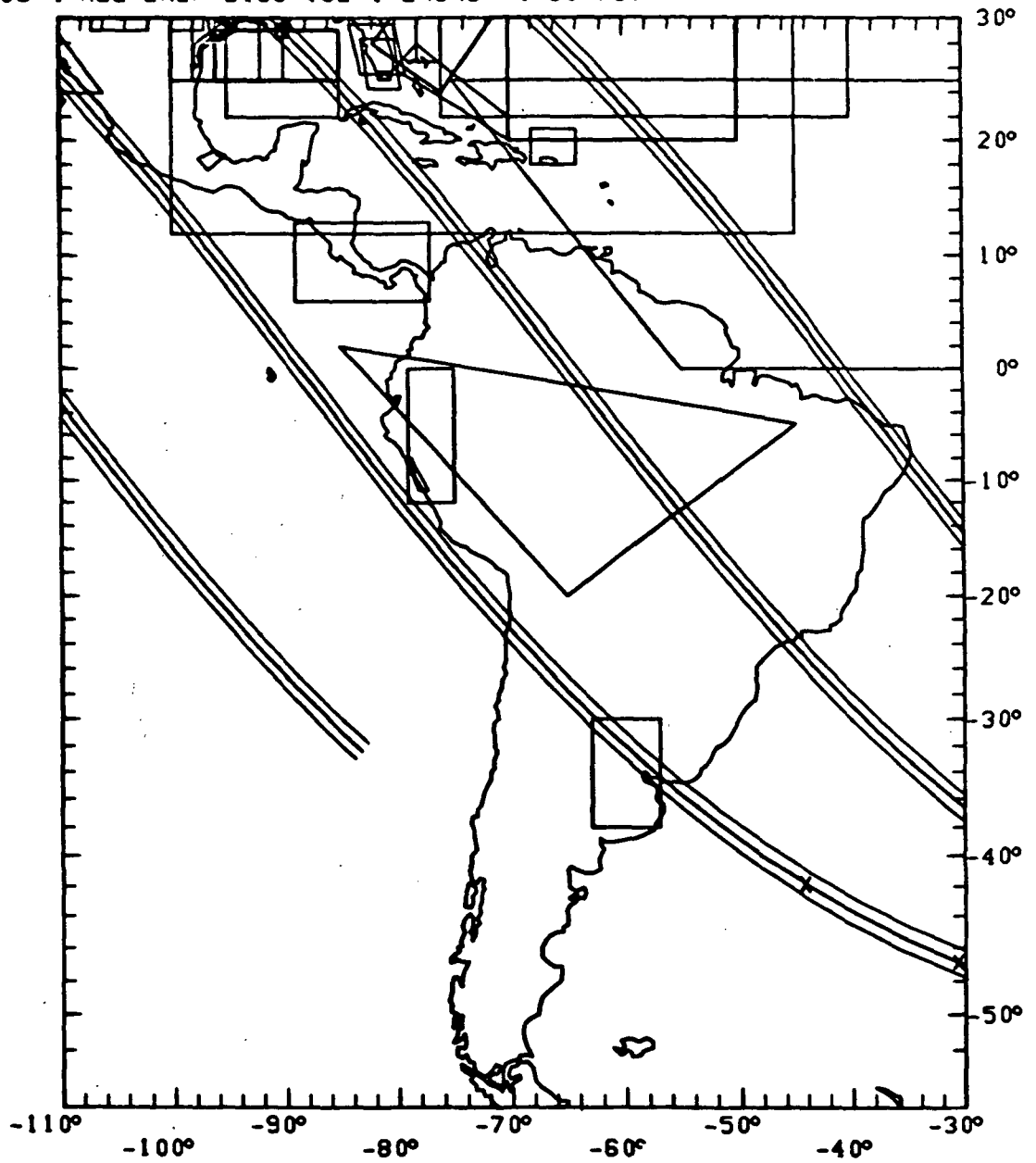
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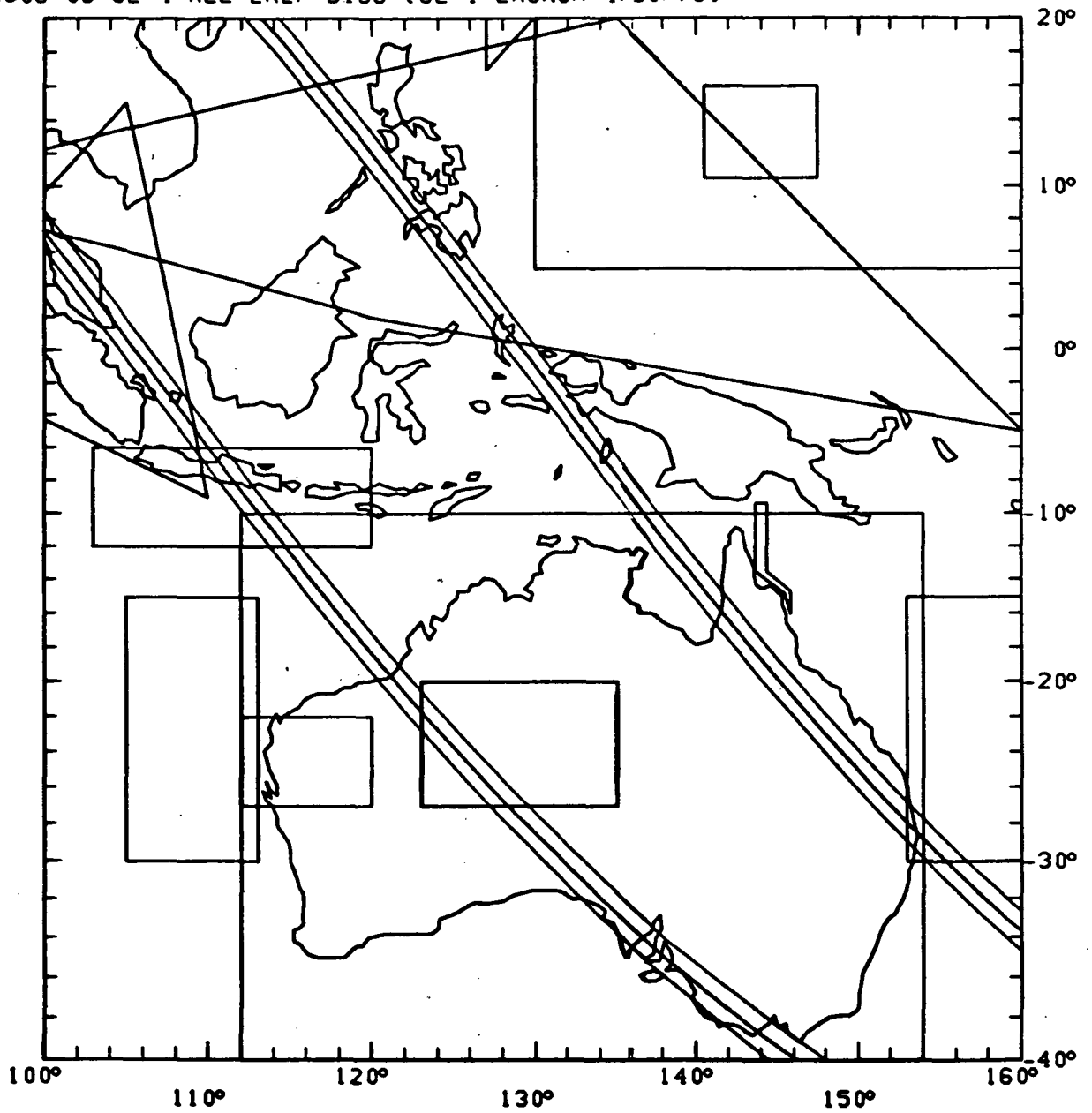
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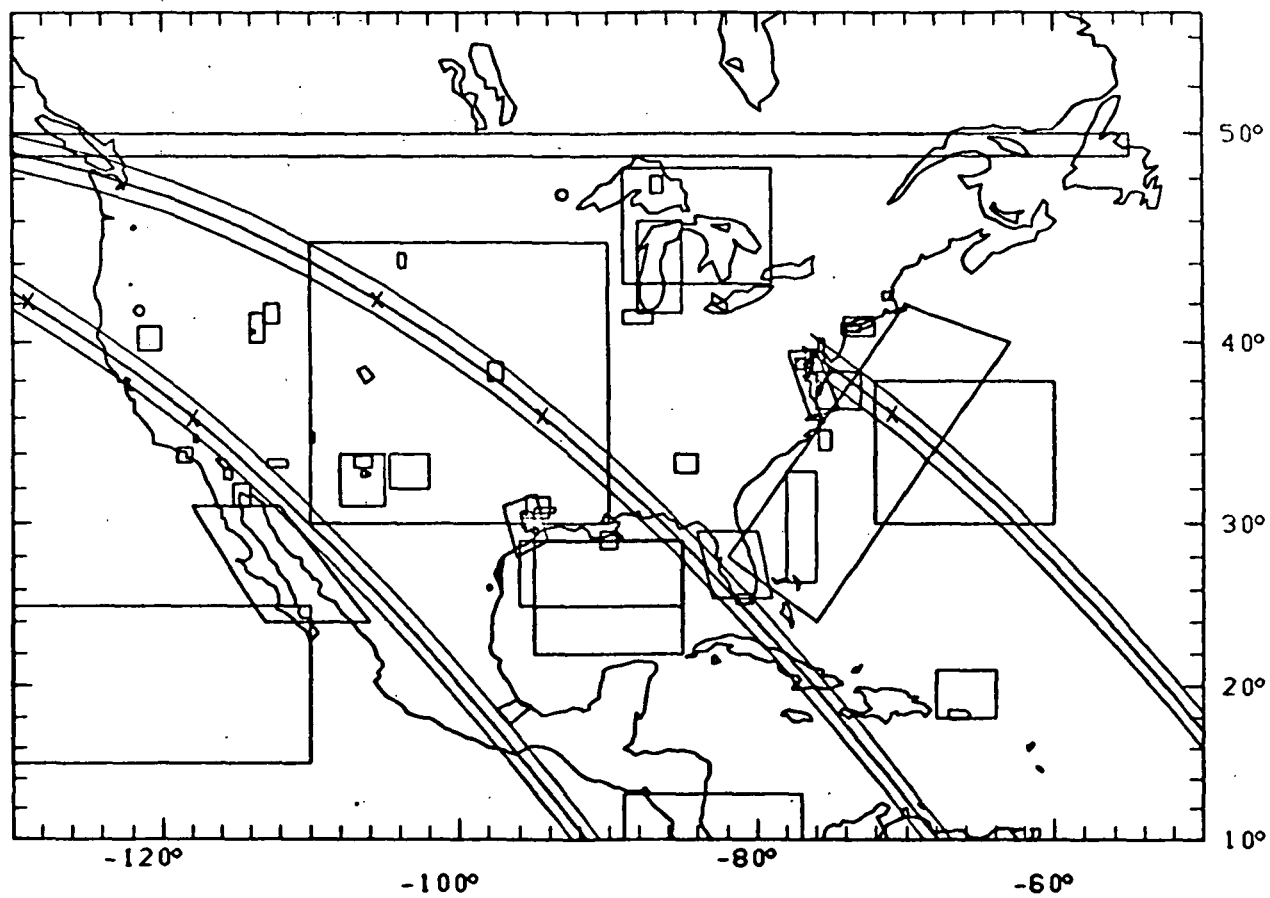
REV 2901-03 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



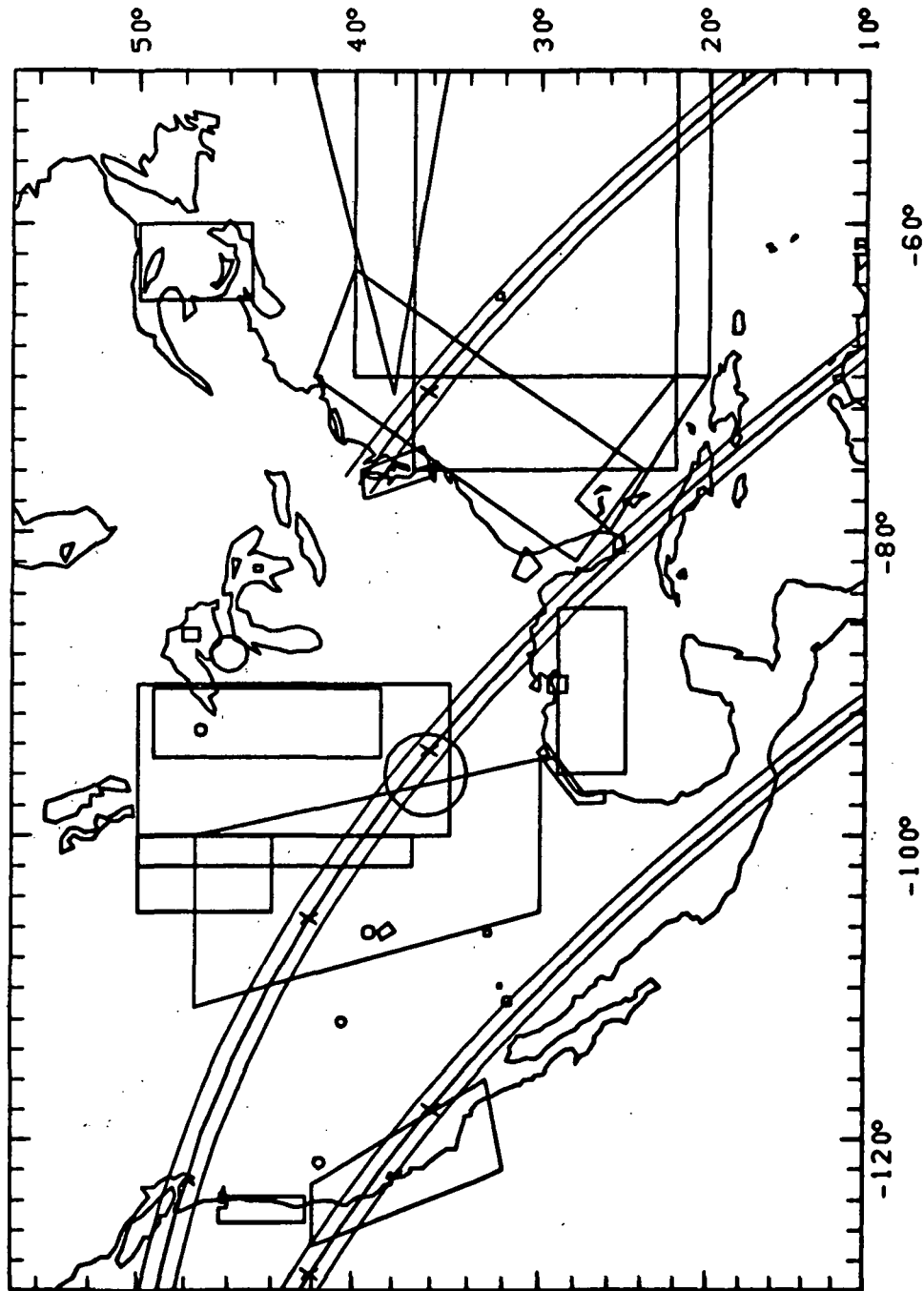
REV 2908-09 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



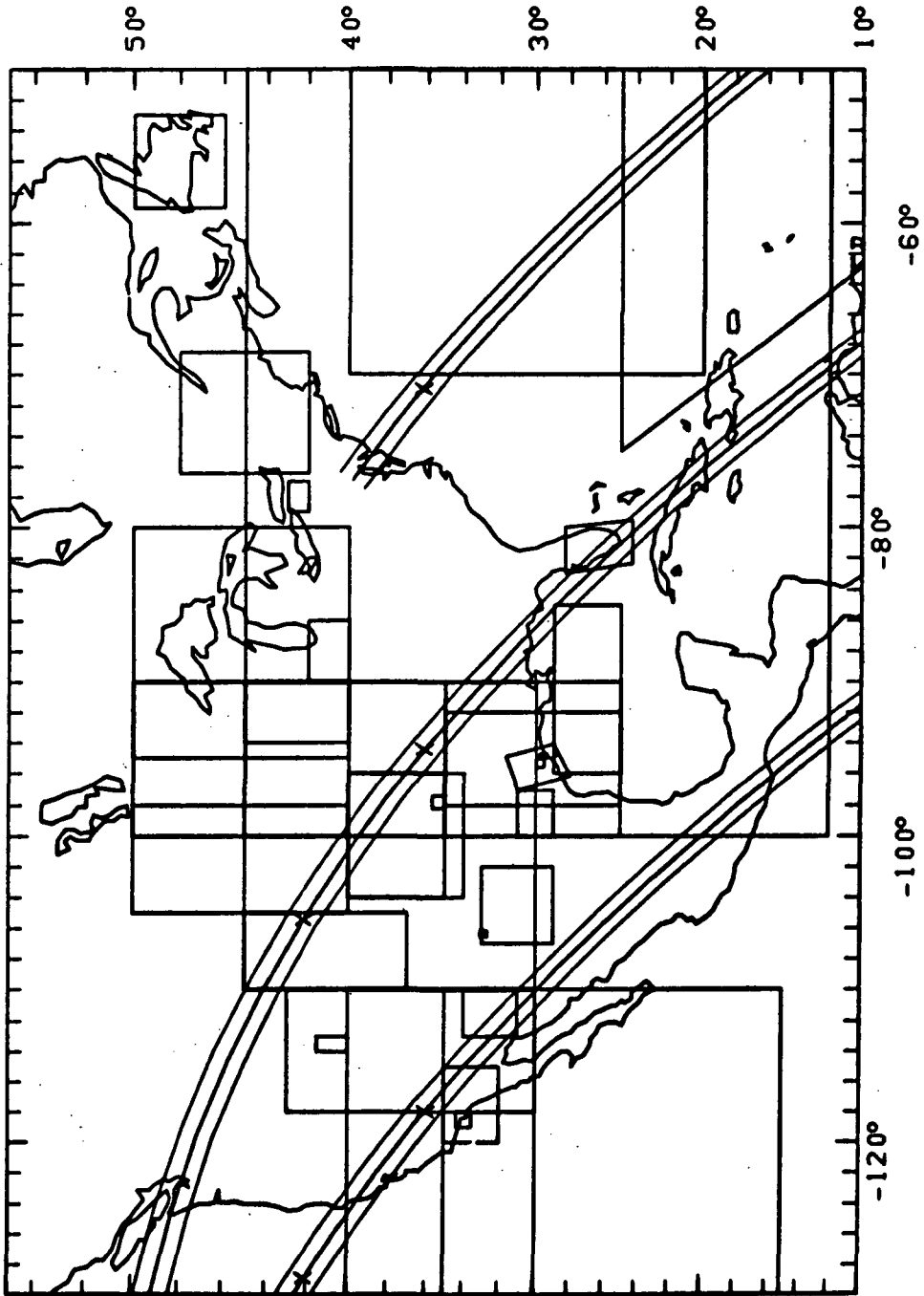
REV 2915-16 SL-4 EREP E,F (SL-1 LAUNCH 4/30/73)



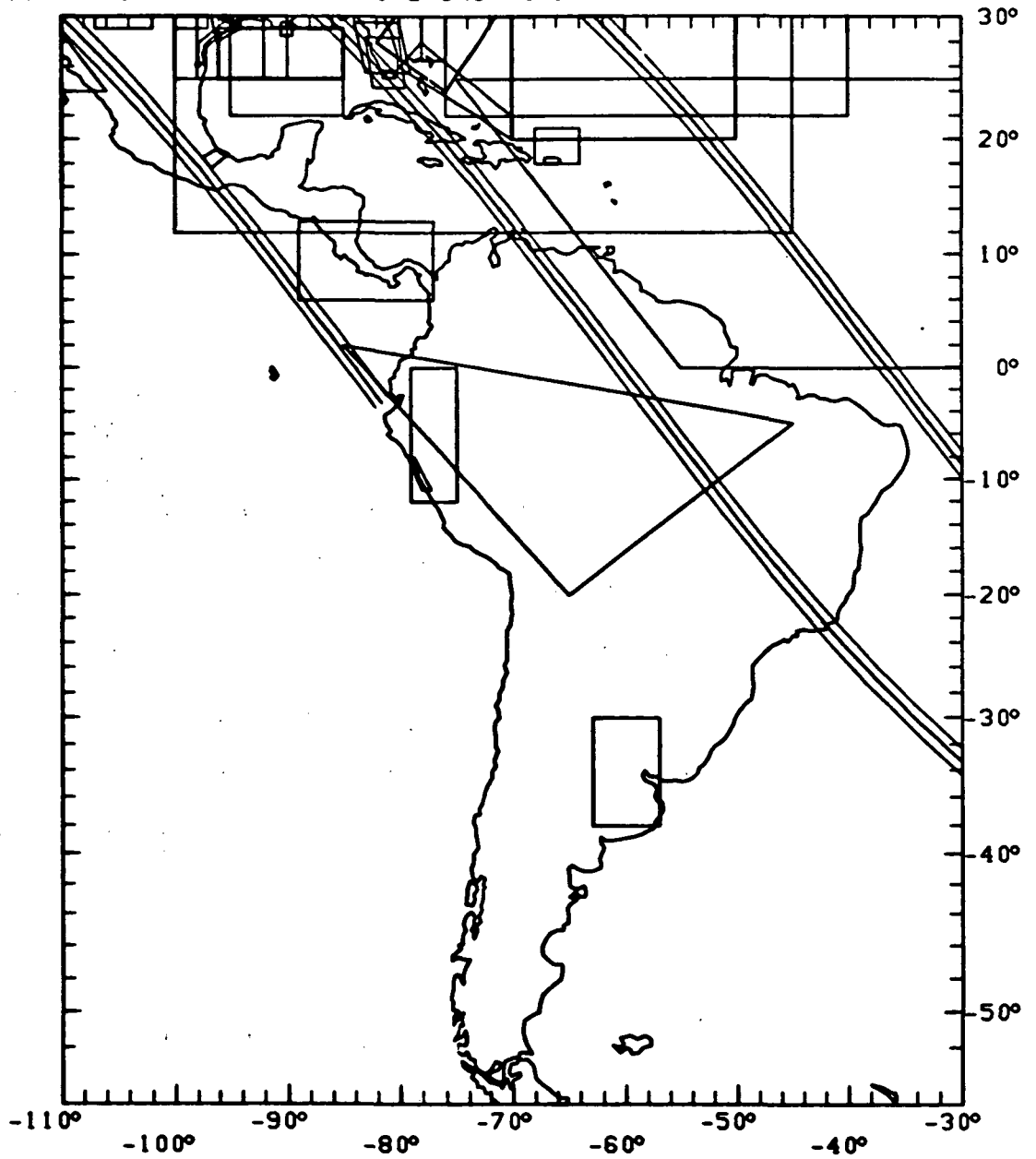
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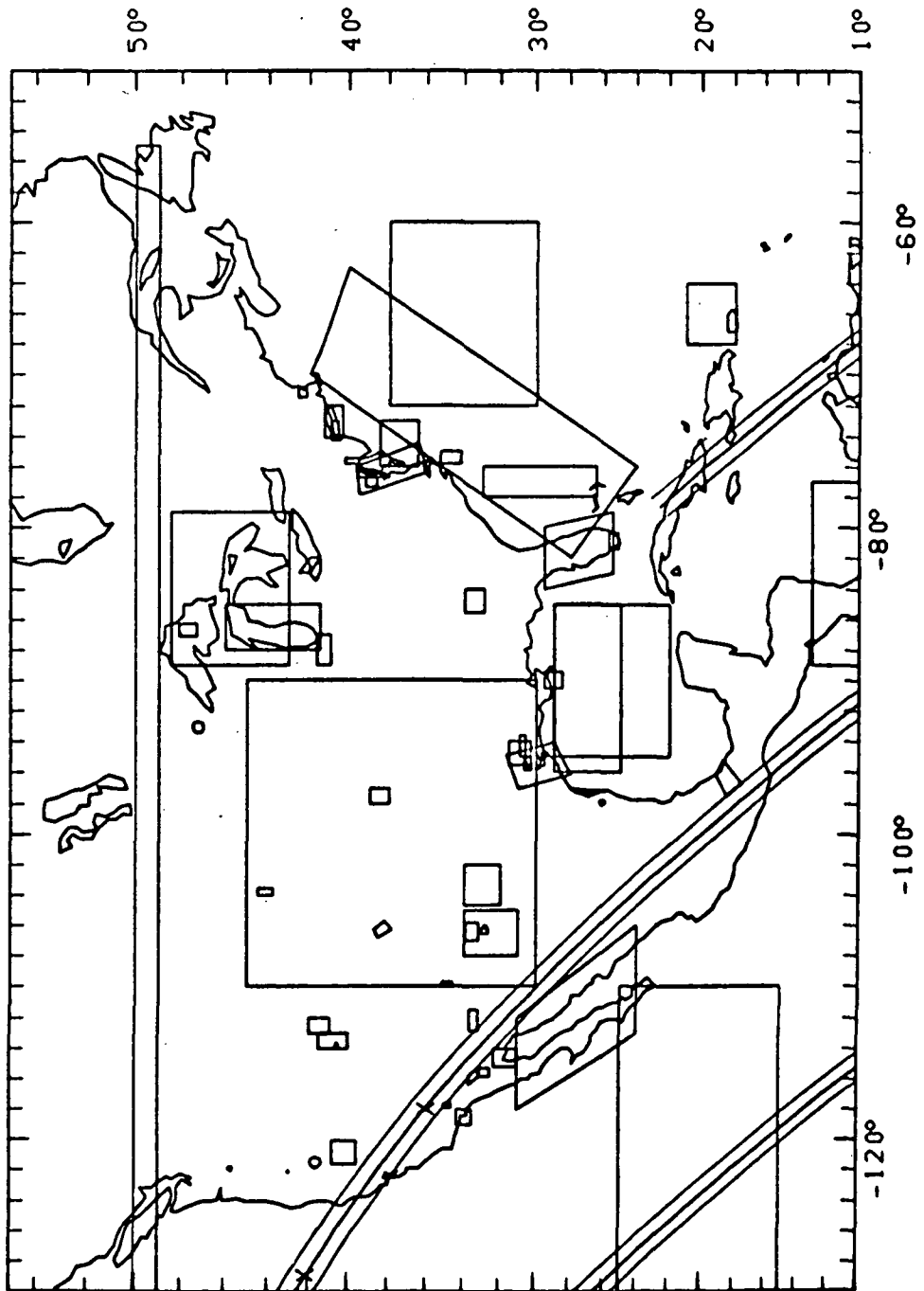
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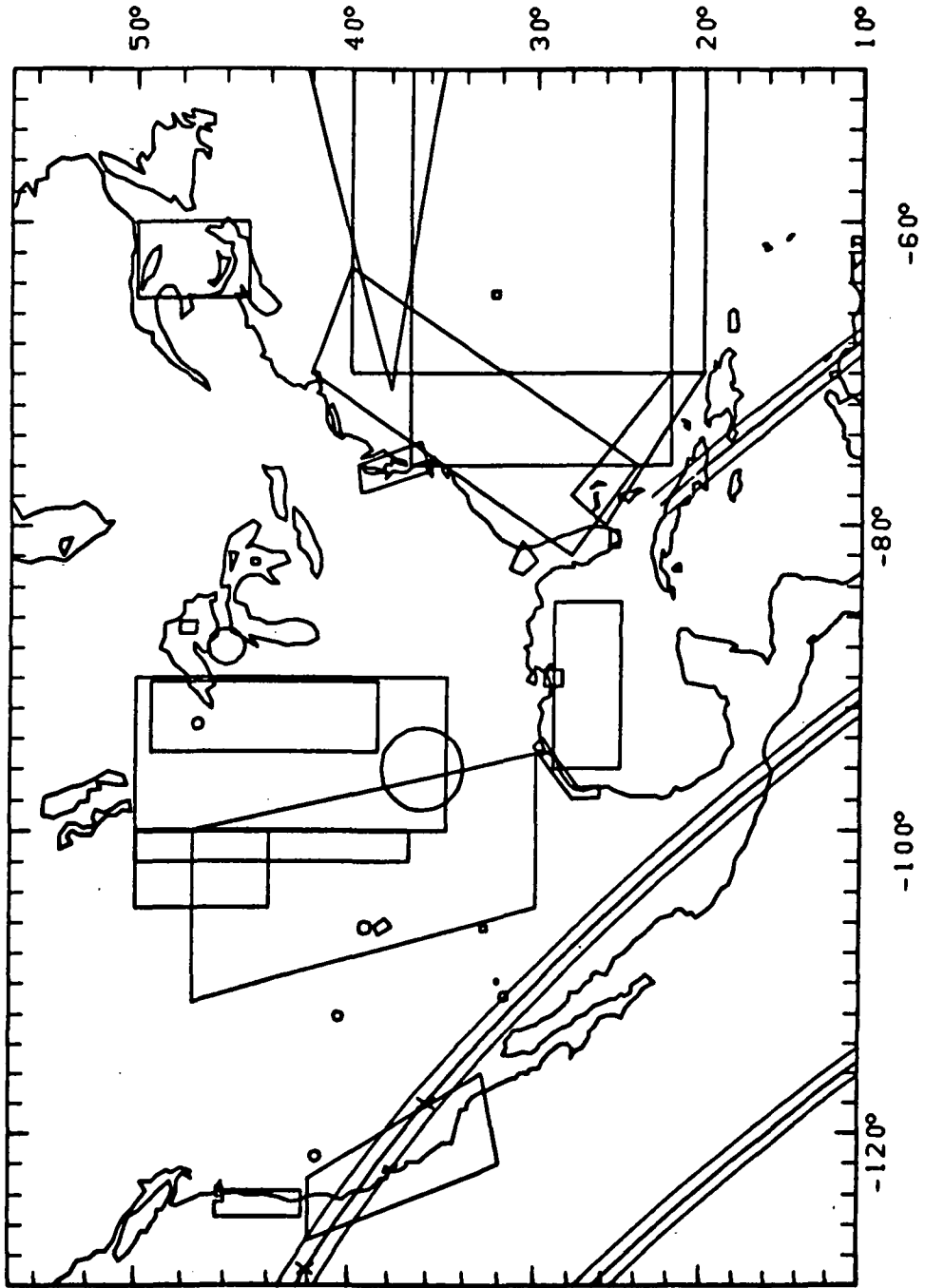
REV 2915-16 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)

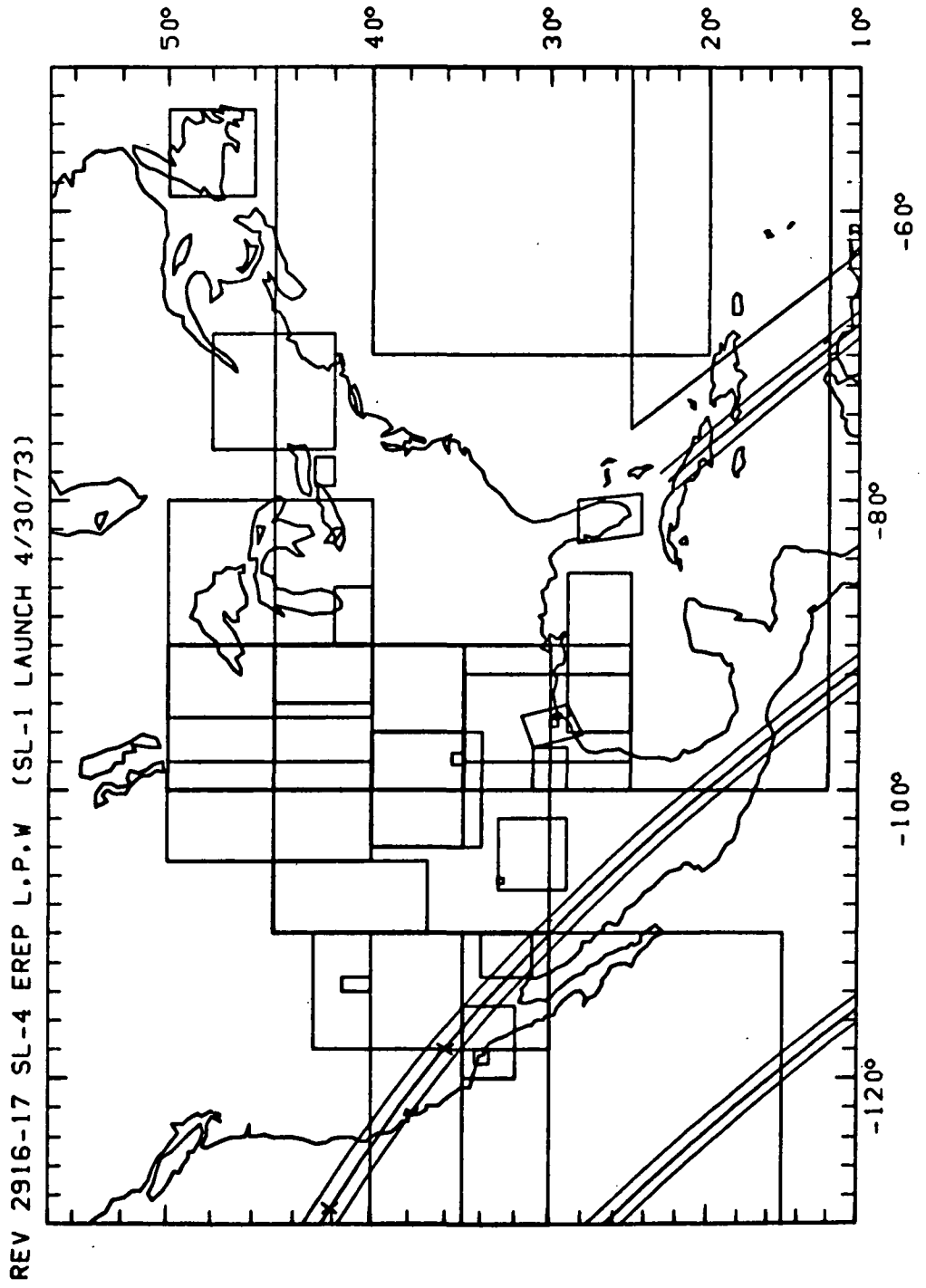


REV 2916-17 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)

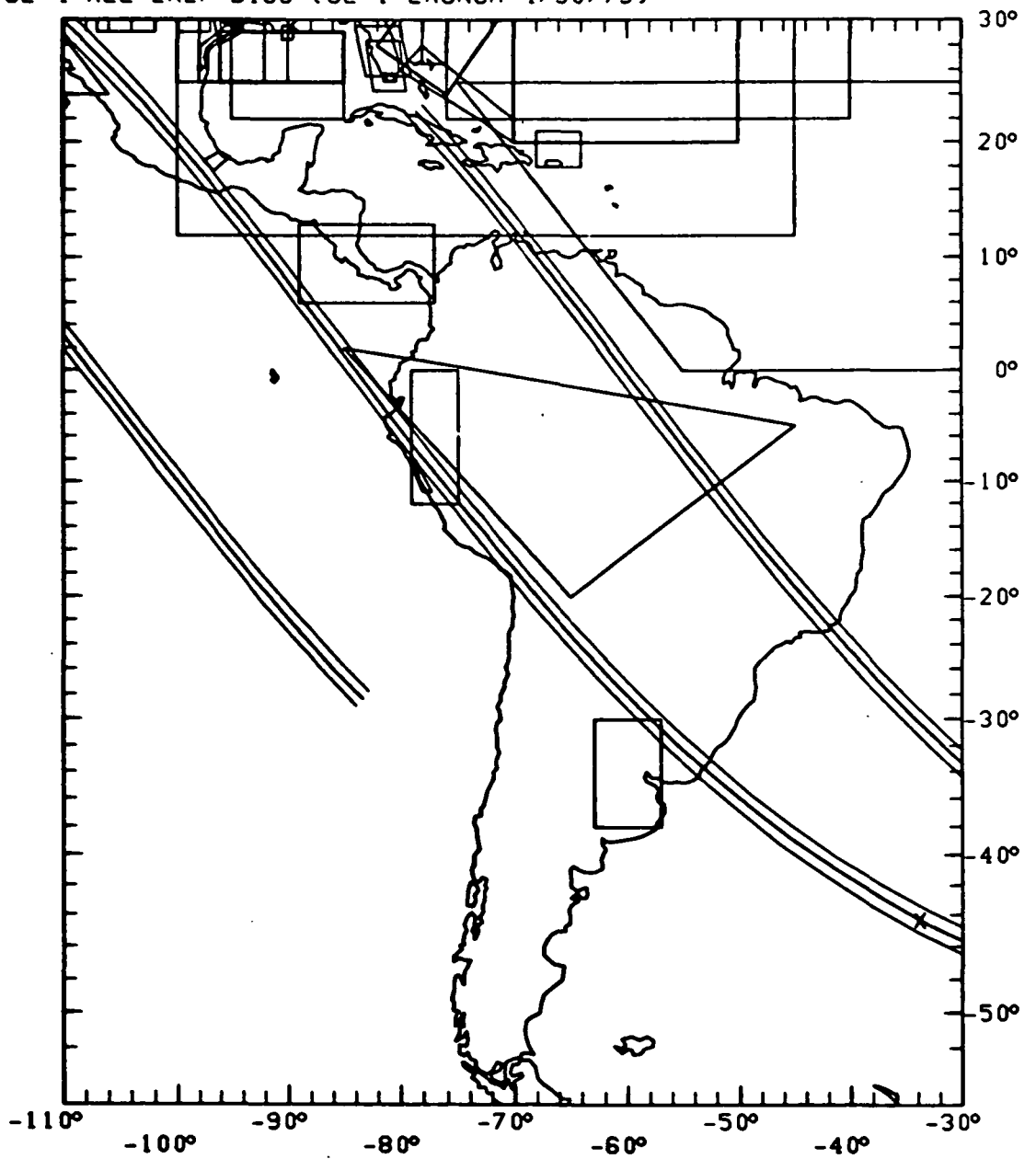


REV 2916-17 SL-4 EREP H.G.O (SL-1 LAUNCH 4/30/73)

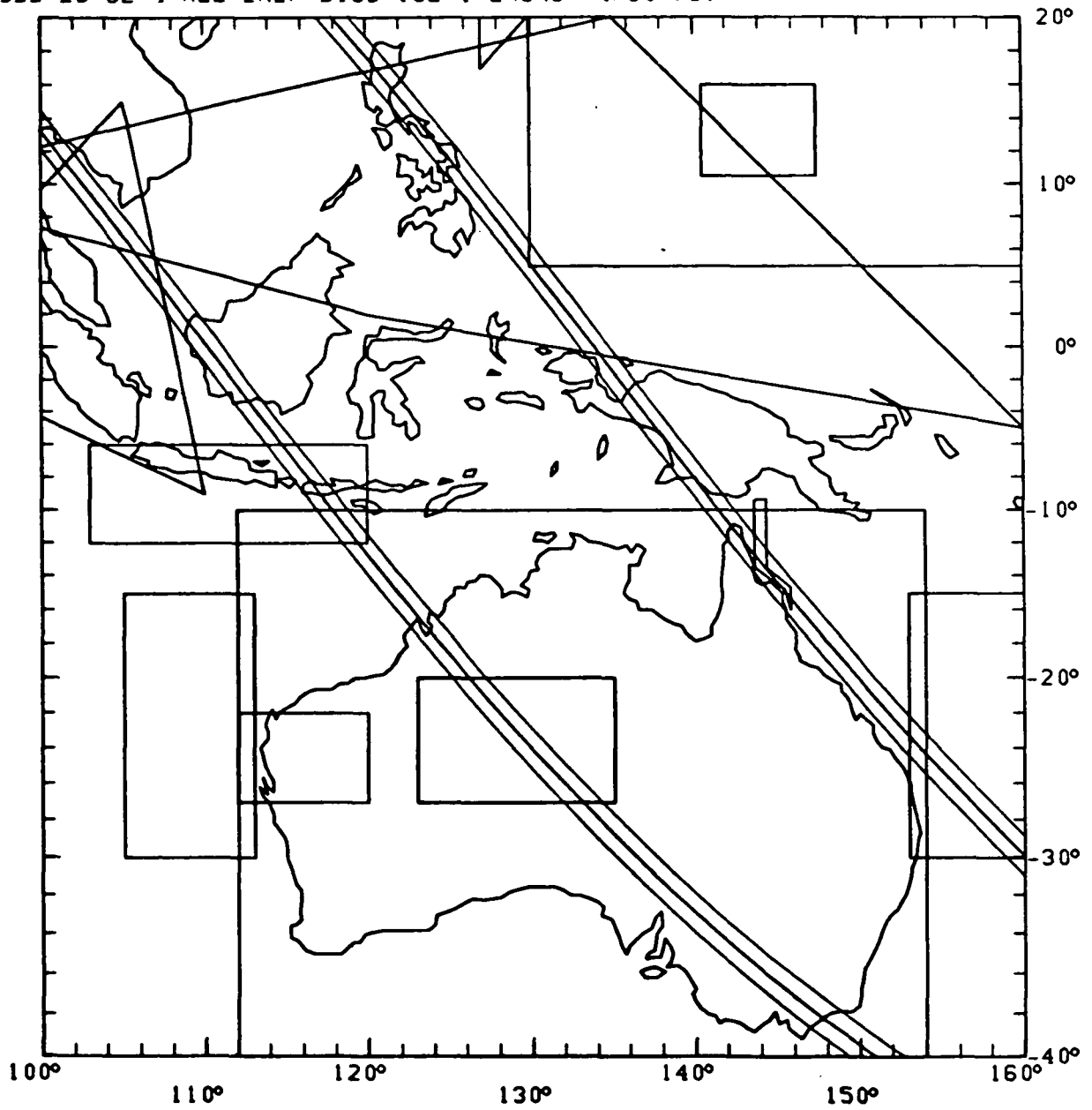




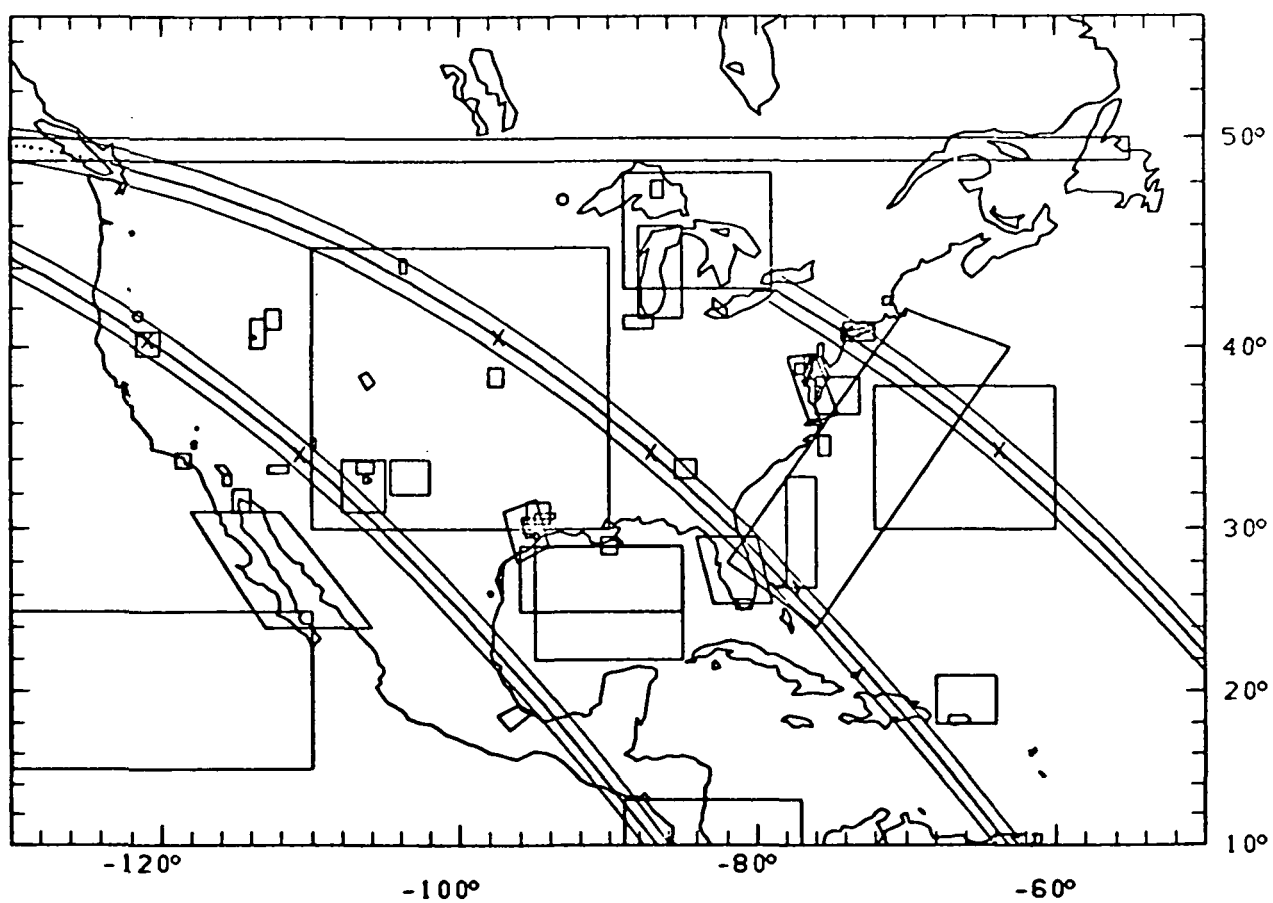
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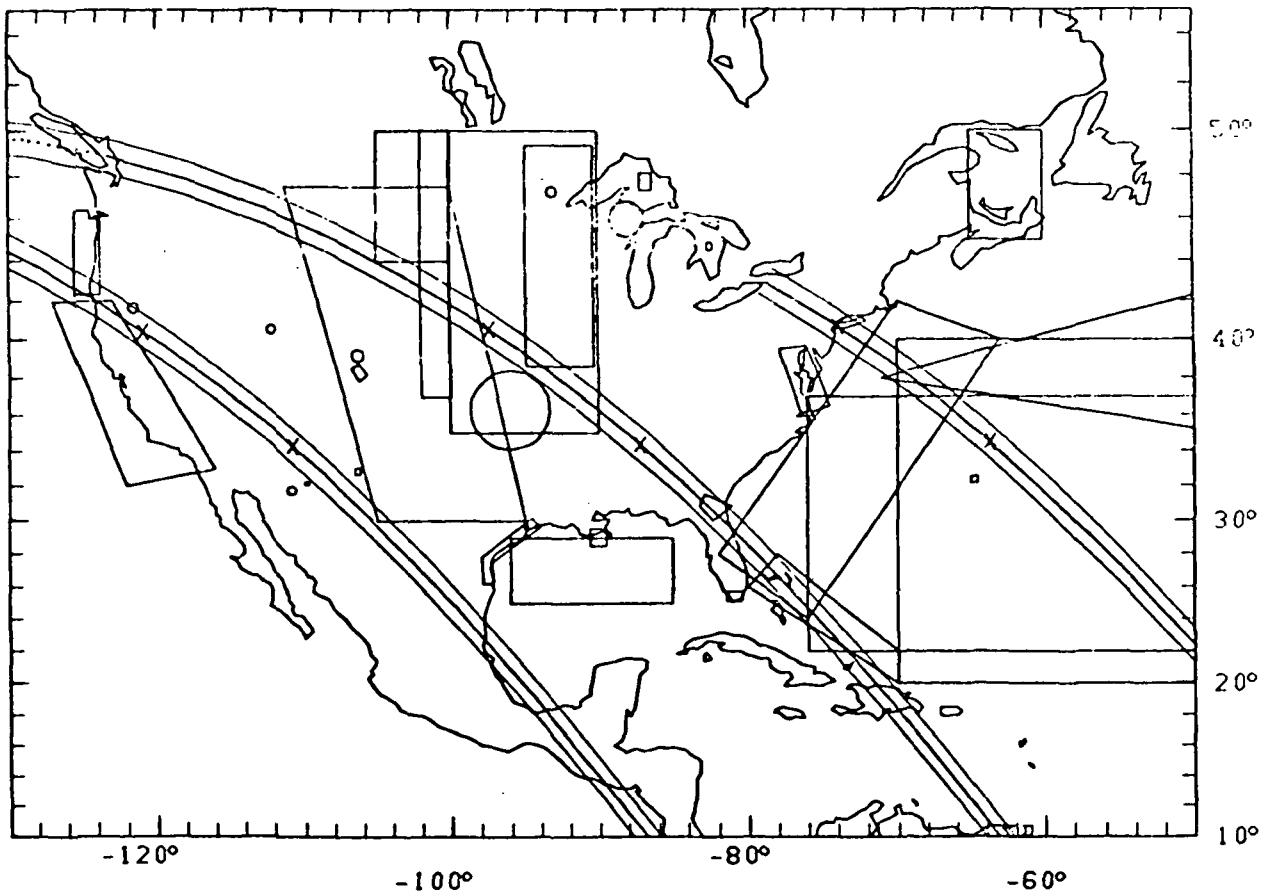
REV 2922-23 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



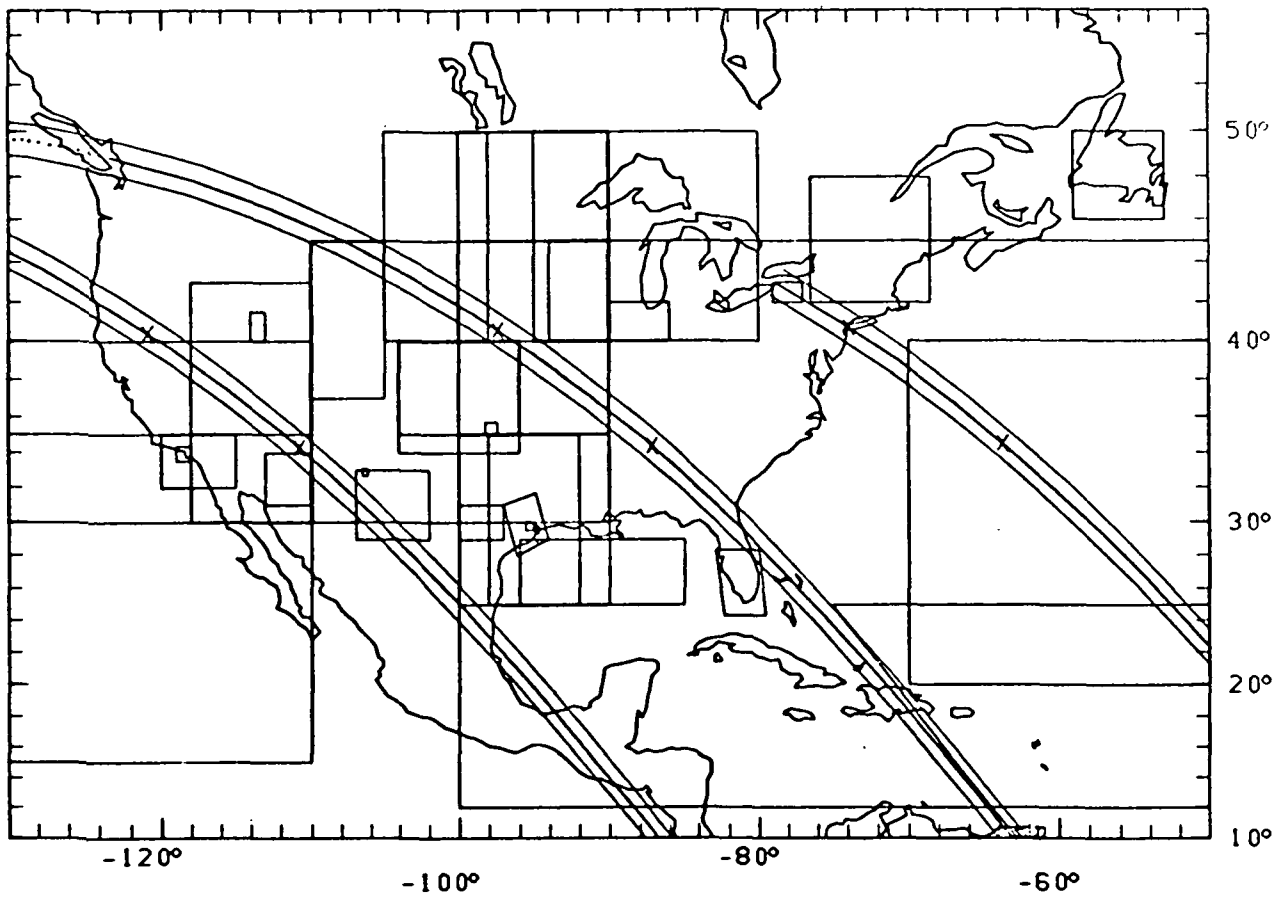
REV 2929-30 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



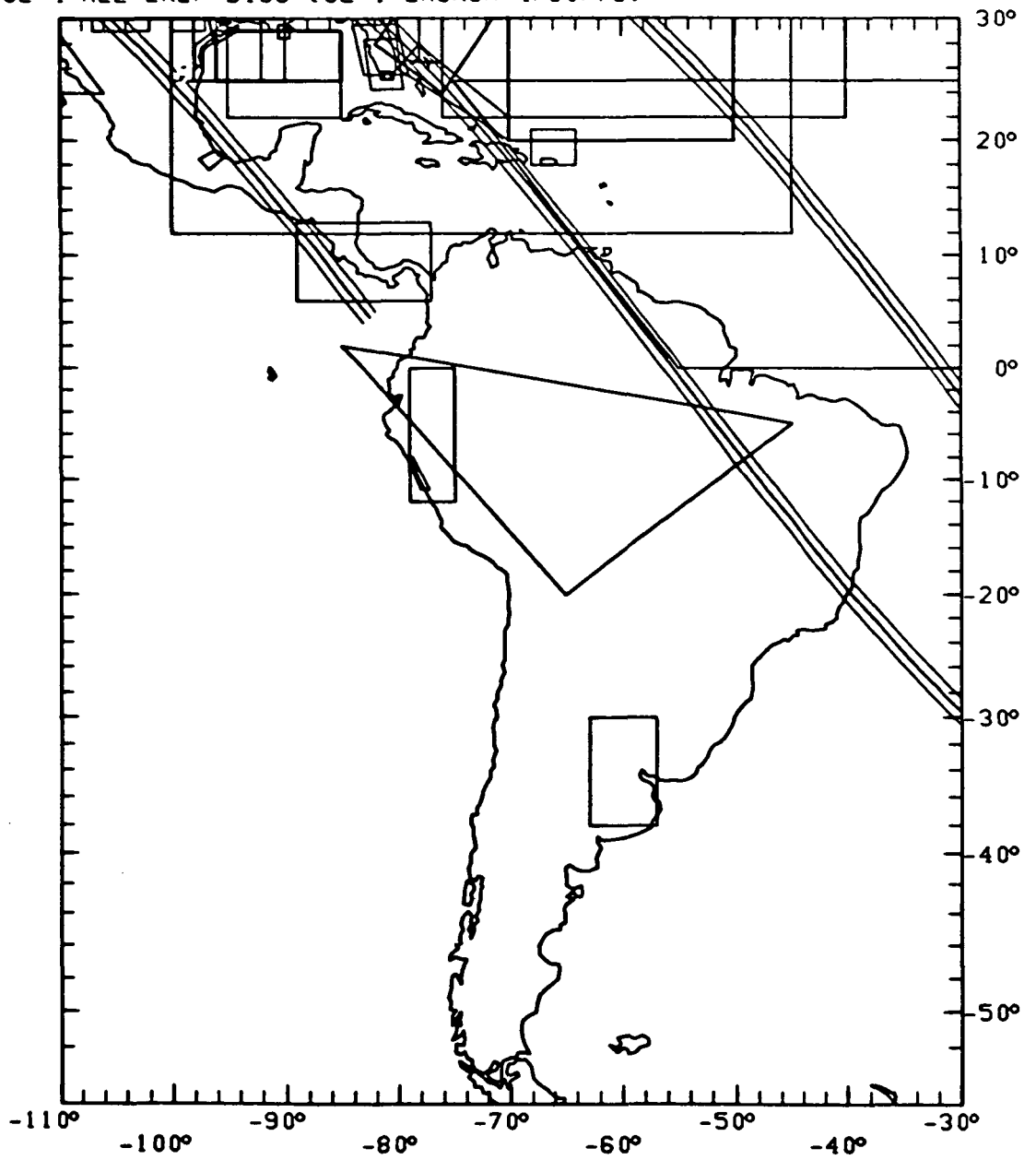
REV 2929-30 SL-4 EREP H.G.O (SL-1 LAUNCH 4/30/73)



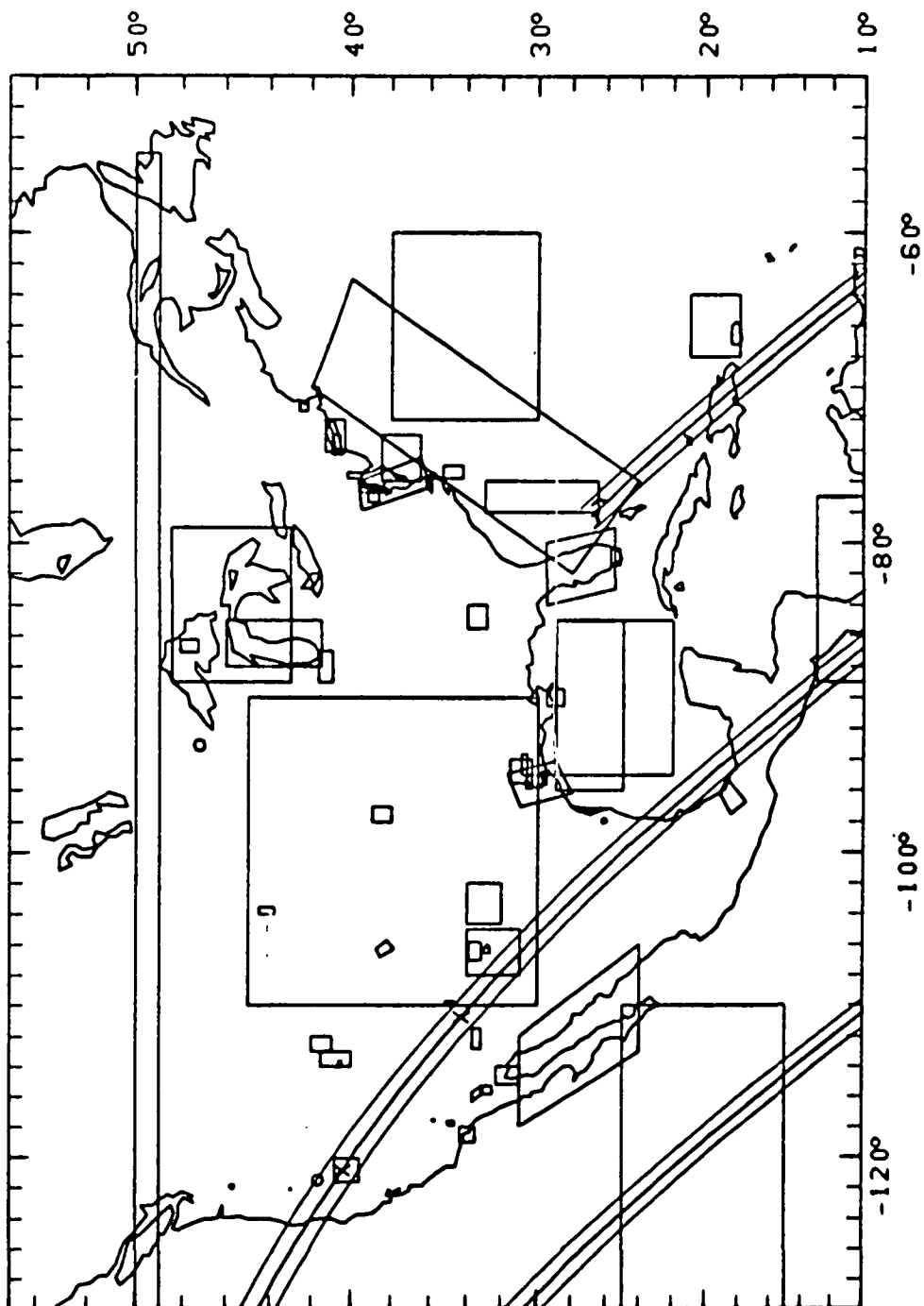
REV 2929-30 SL-4 EREP L.P.W (SL-1 LAUNCH 4/30/73)



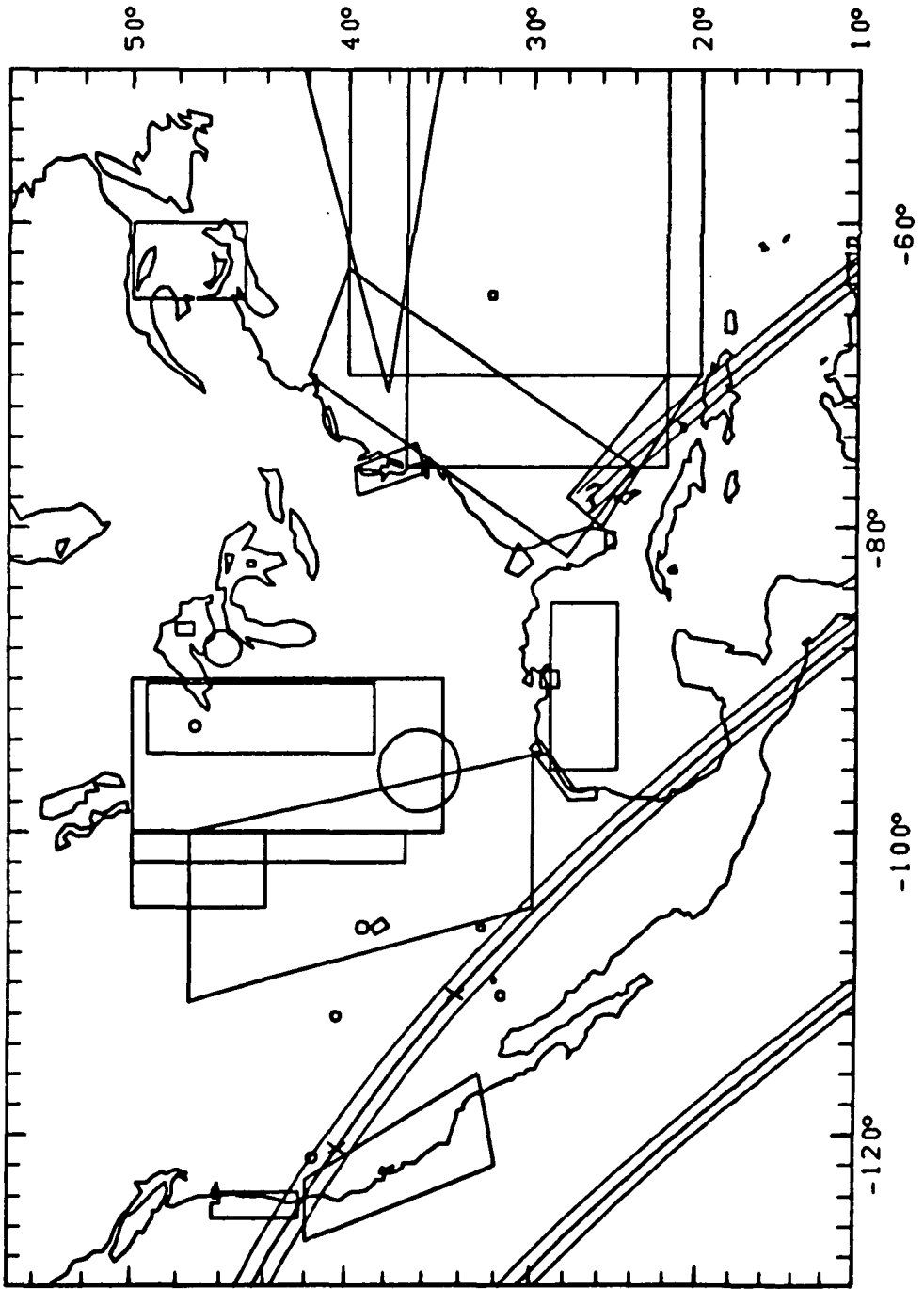
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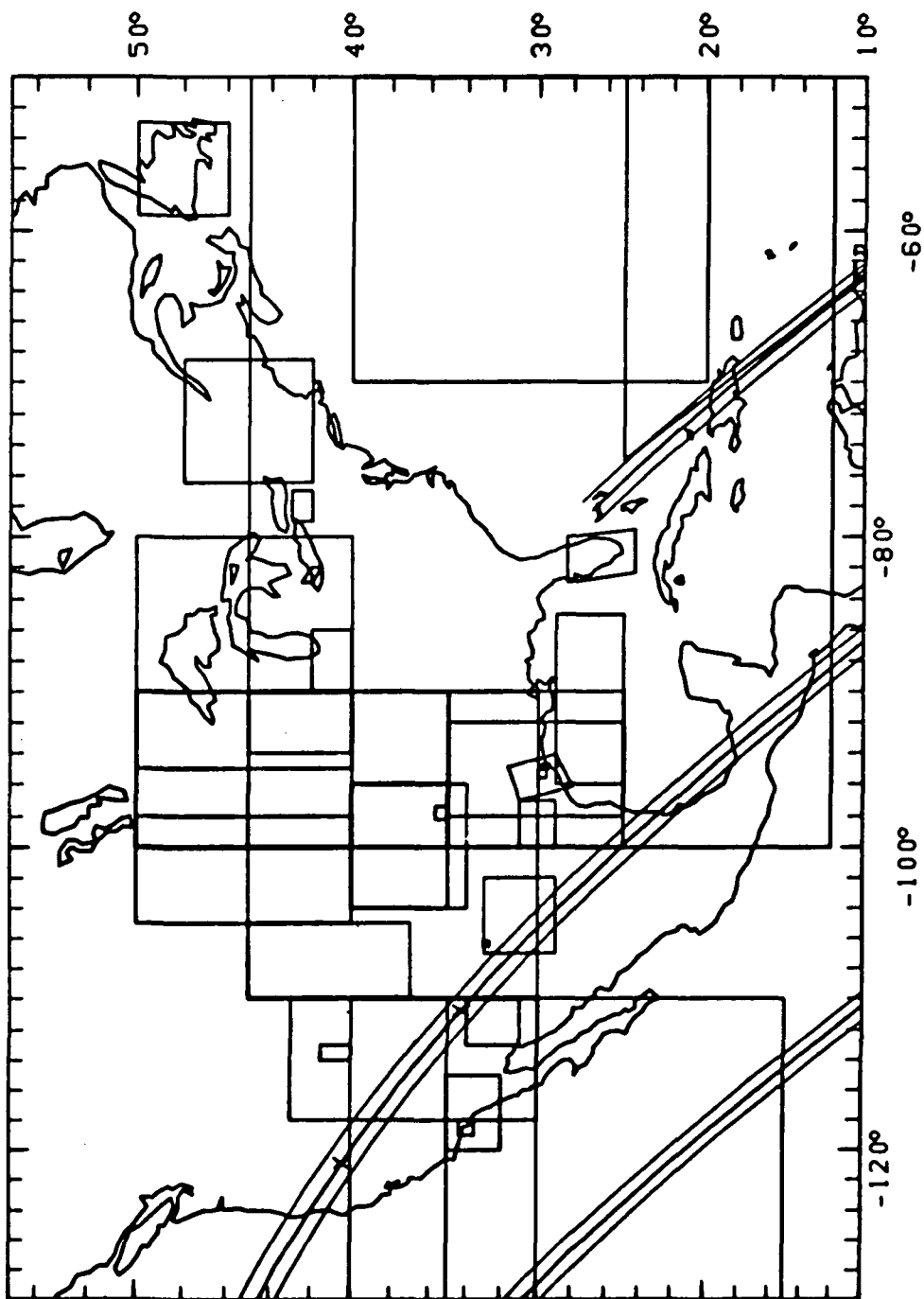
REV 2930-31 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



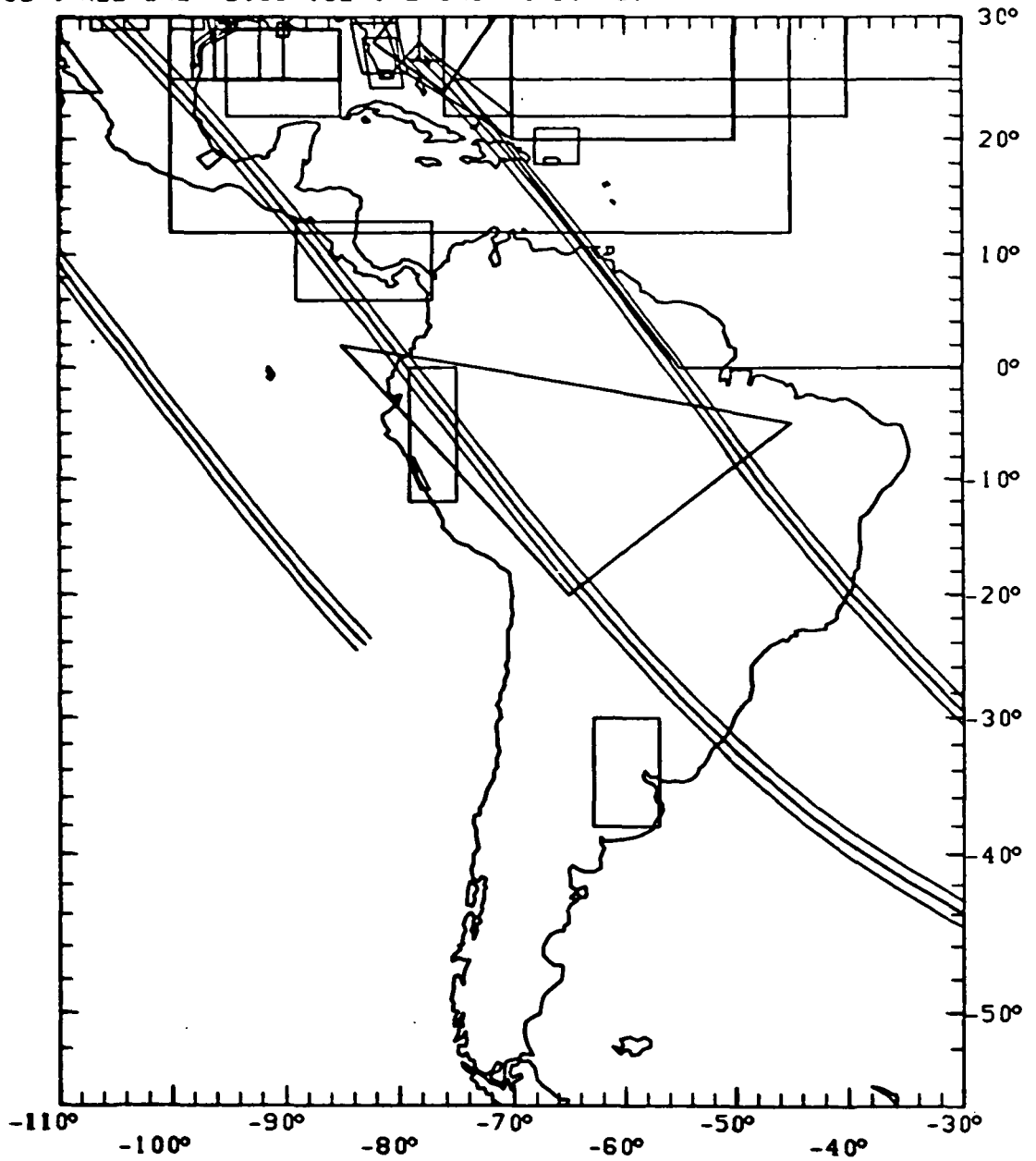
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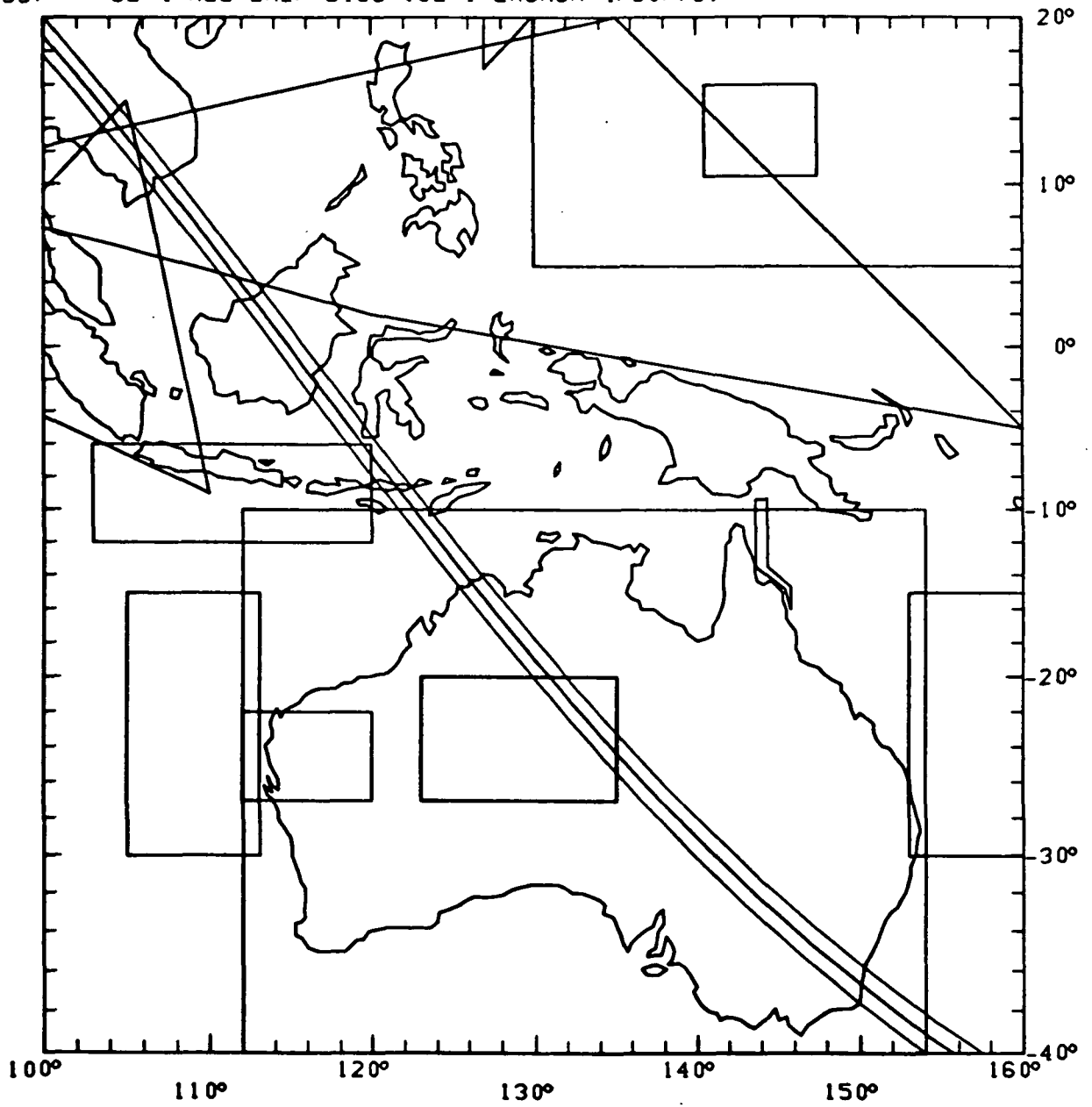
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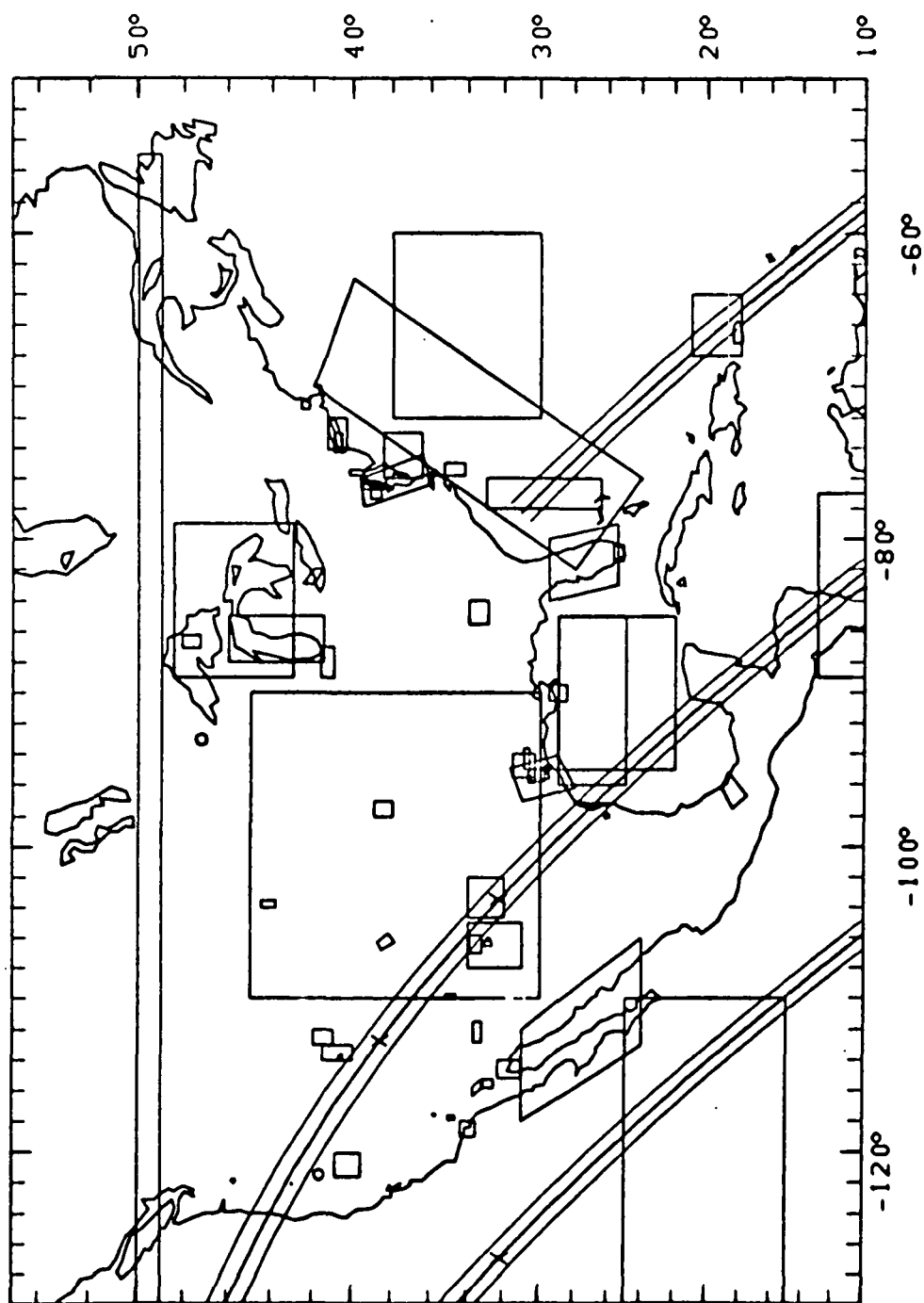
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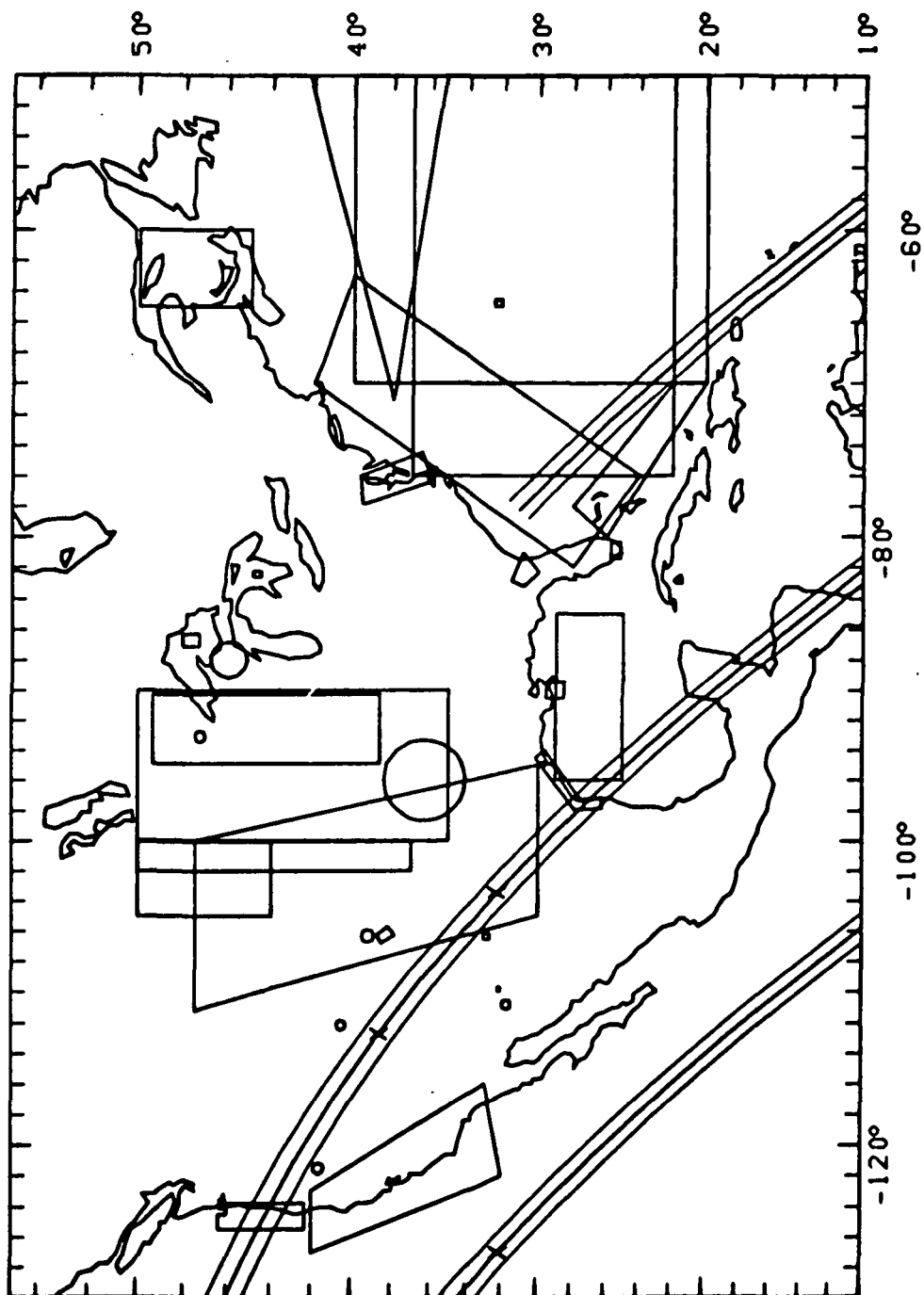
REV 2937 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



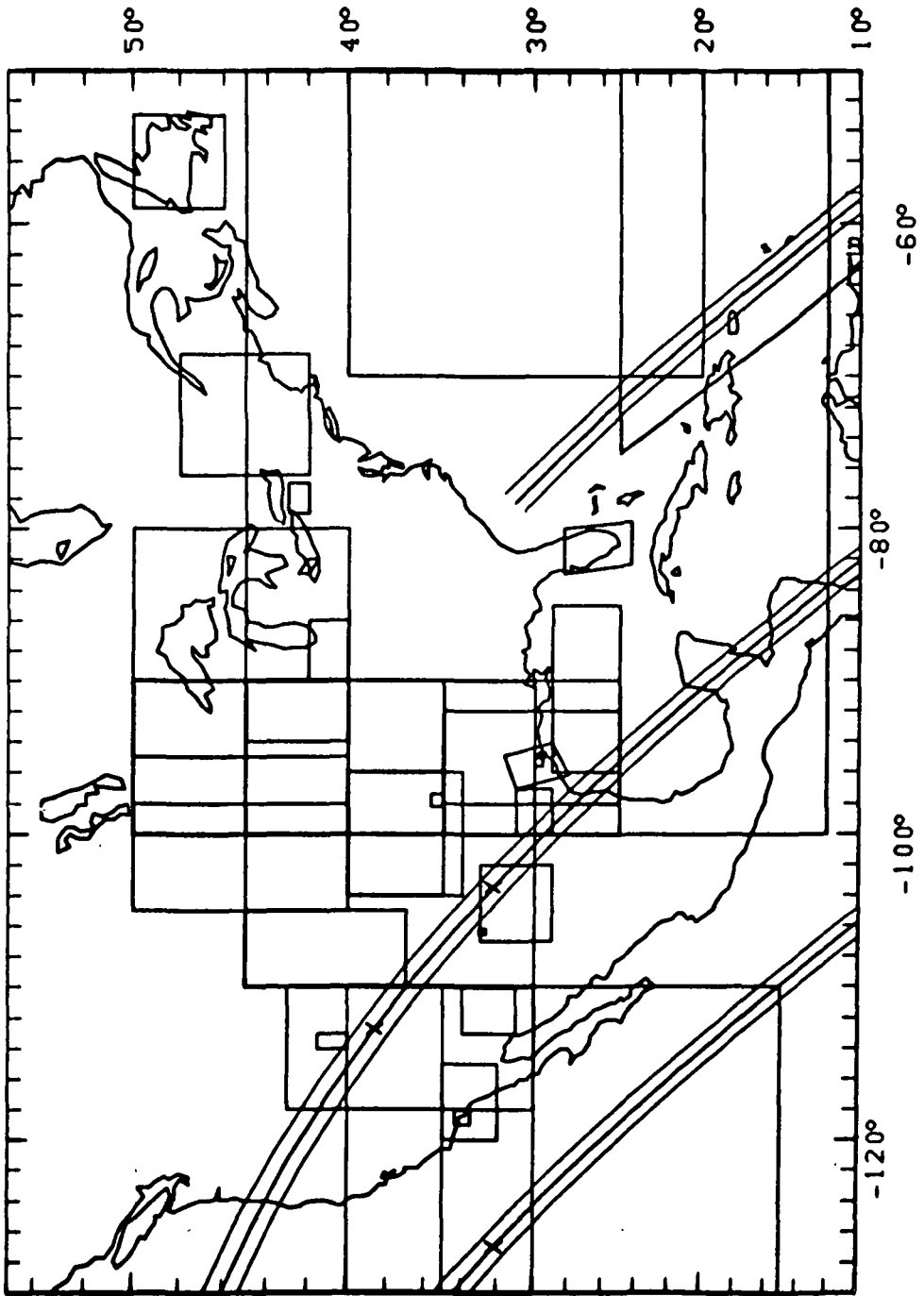
REV 2944-45 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



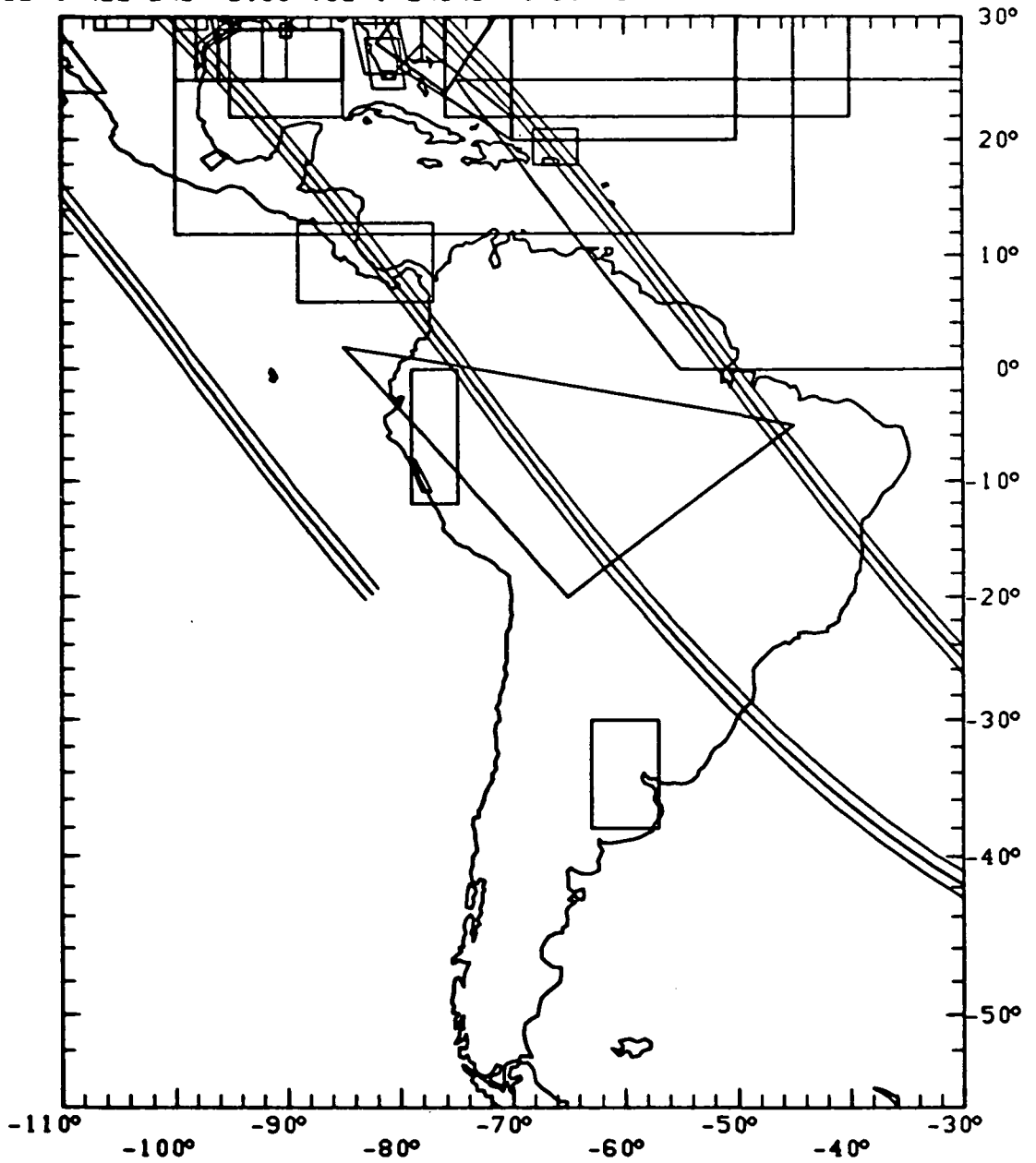
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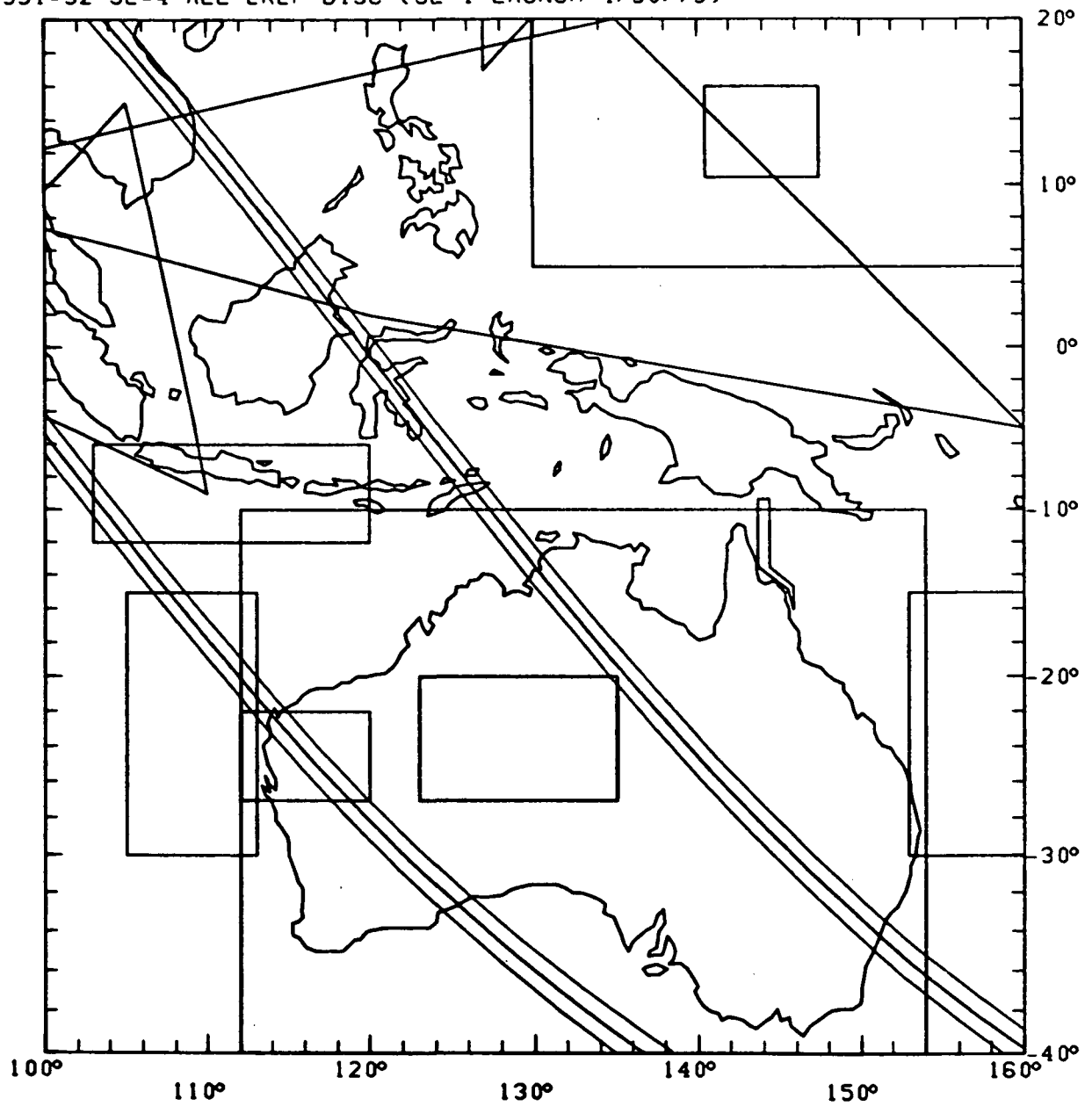
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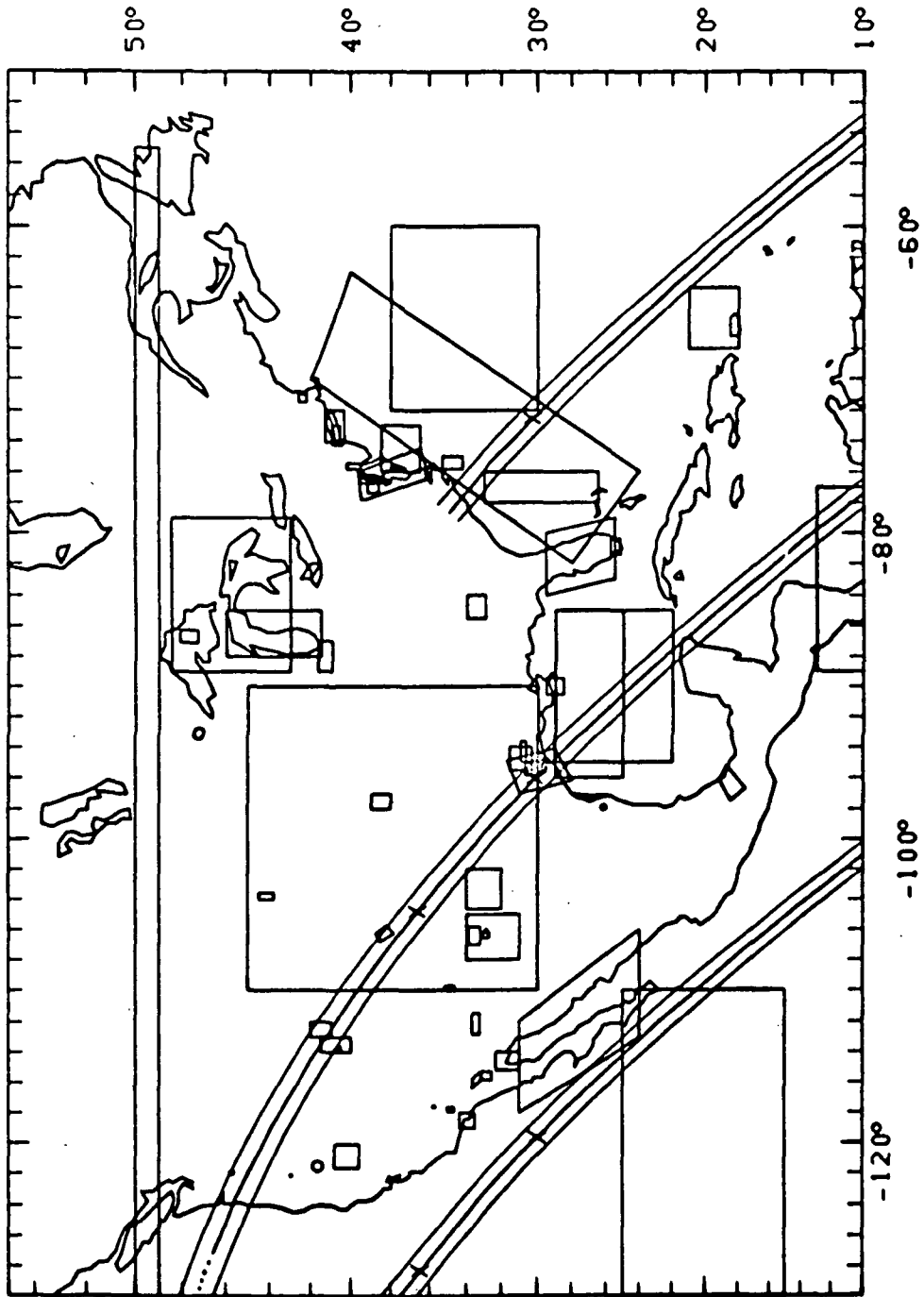
REV 2944-45 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



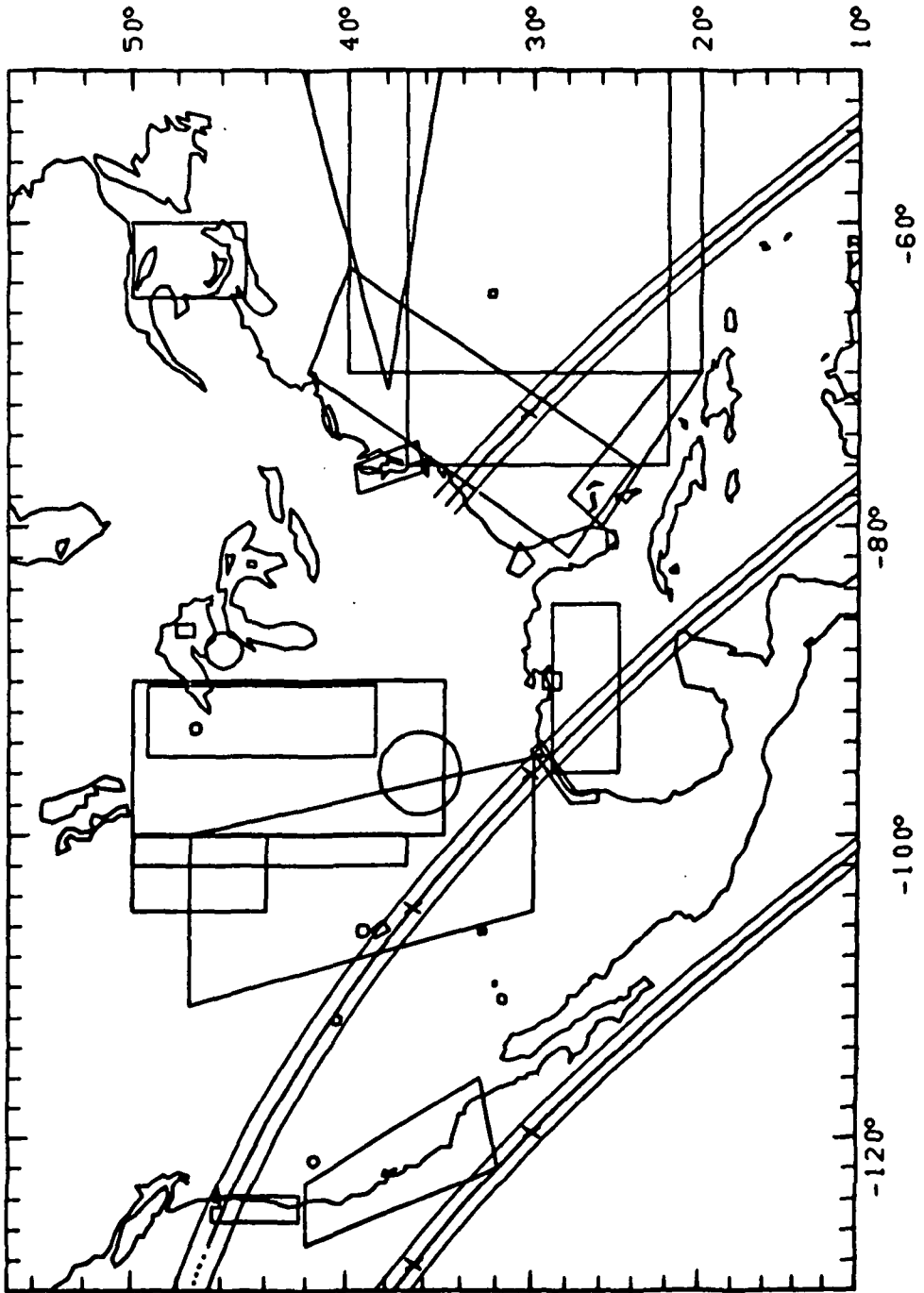
REV 2951-52 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



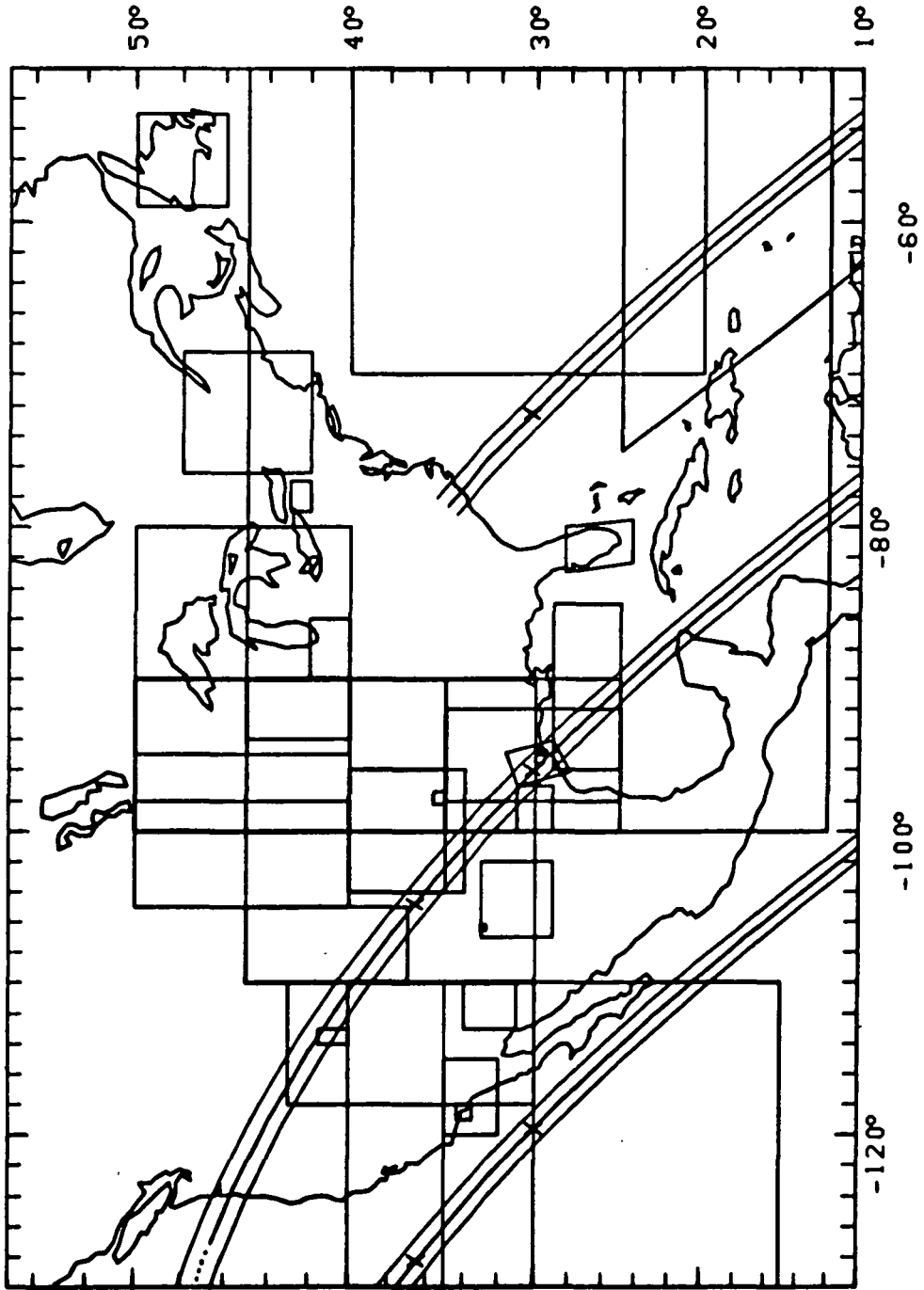
REV 2958-59 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



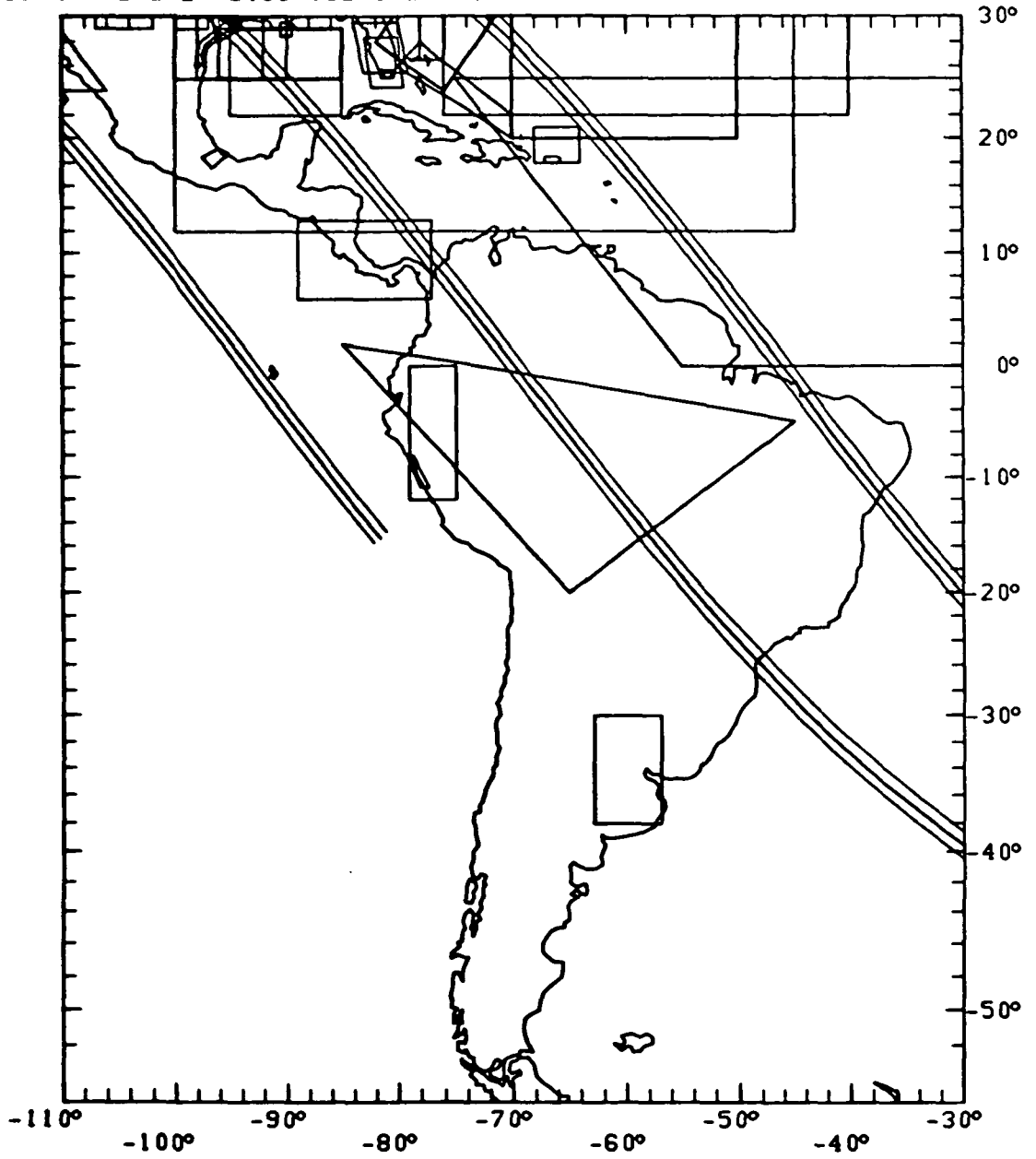
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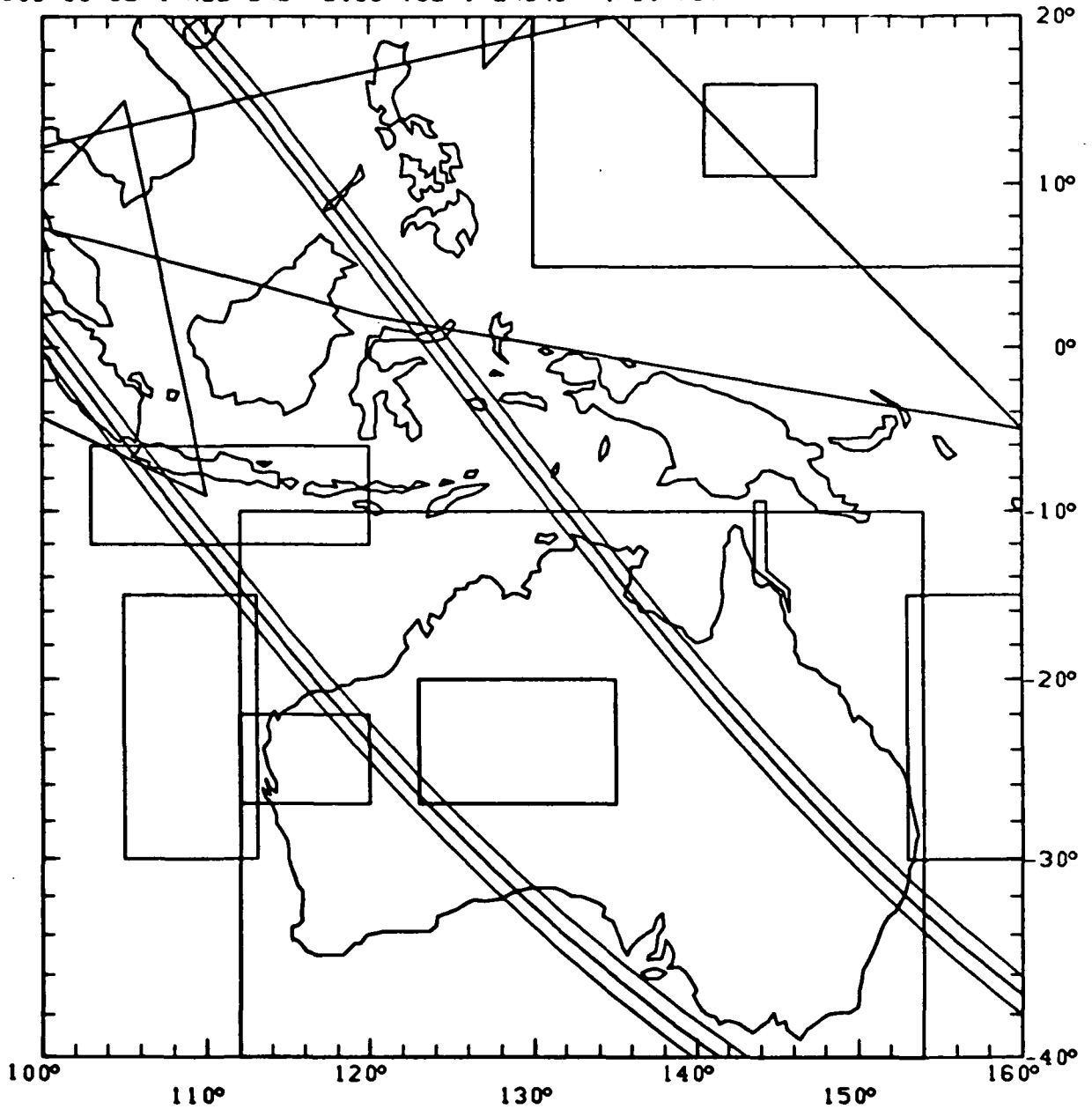
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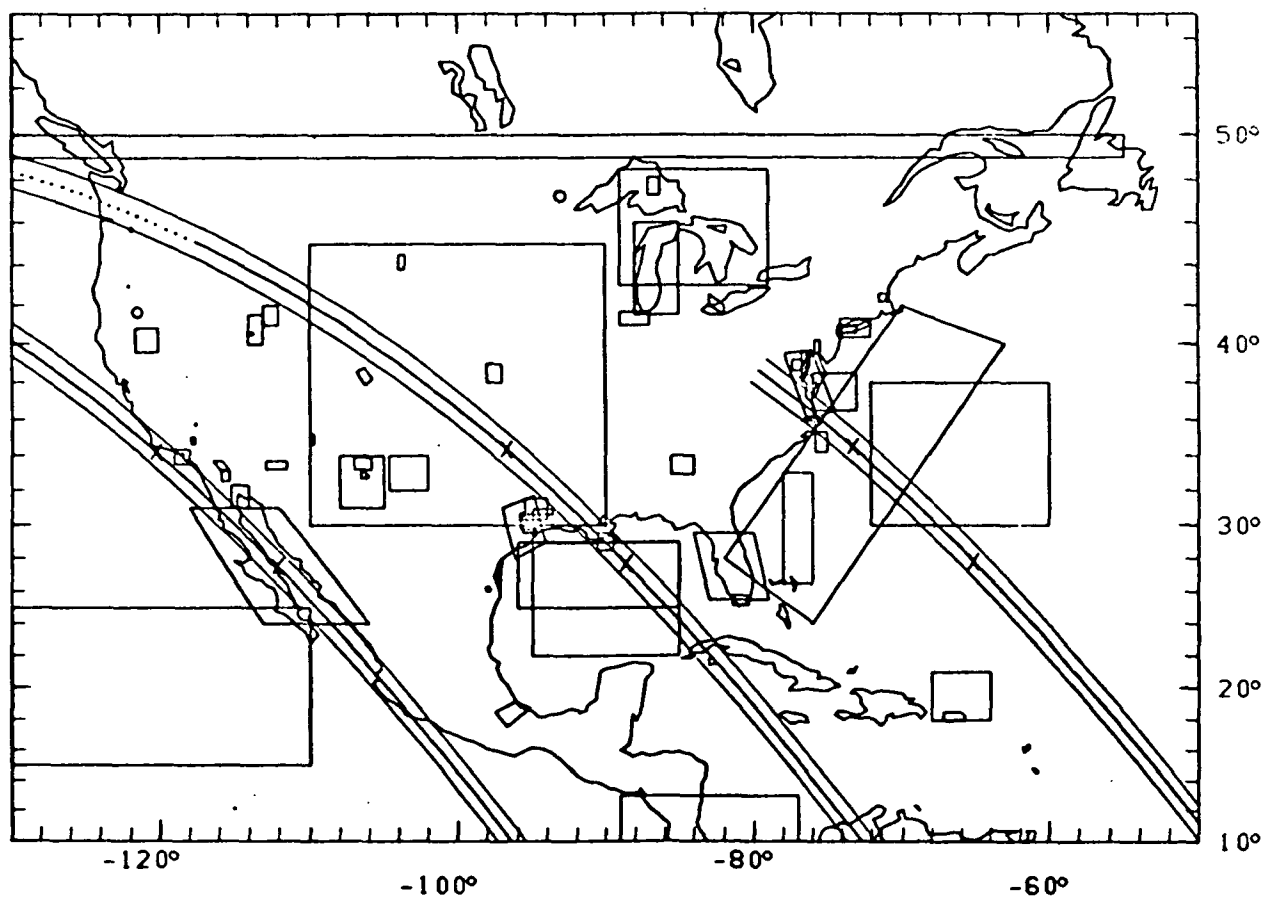
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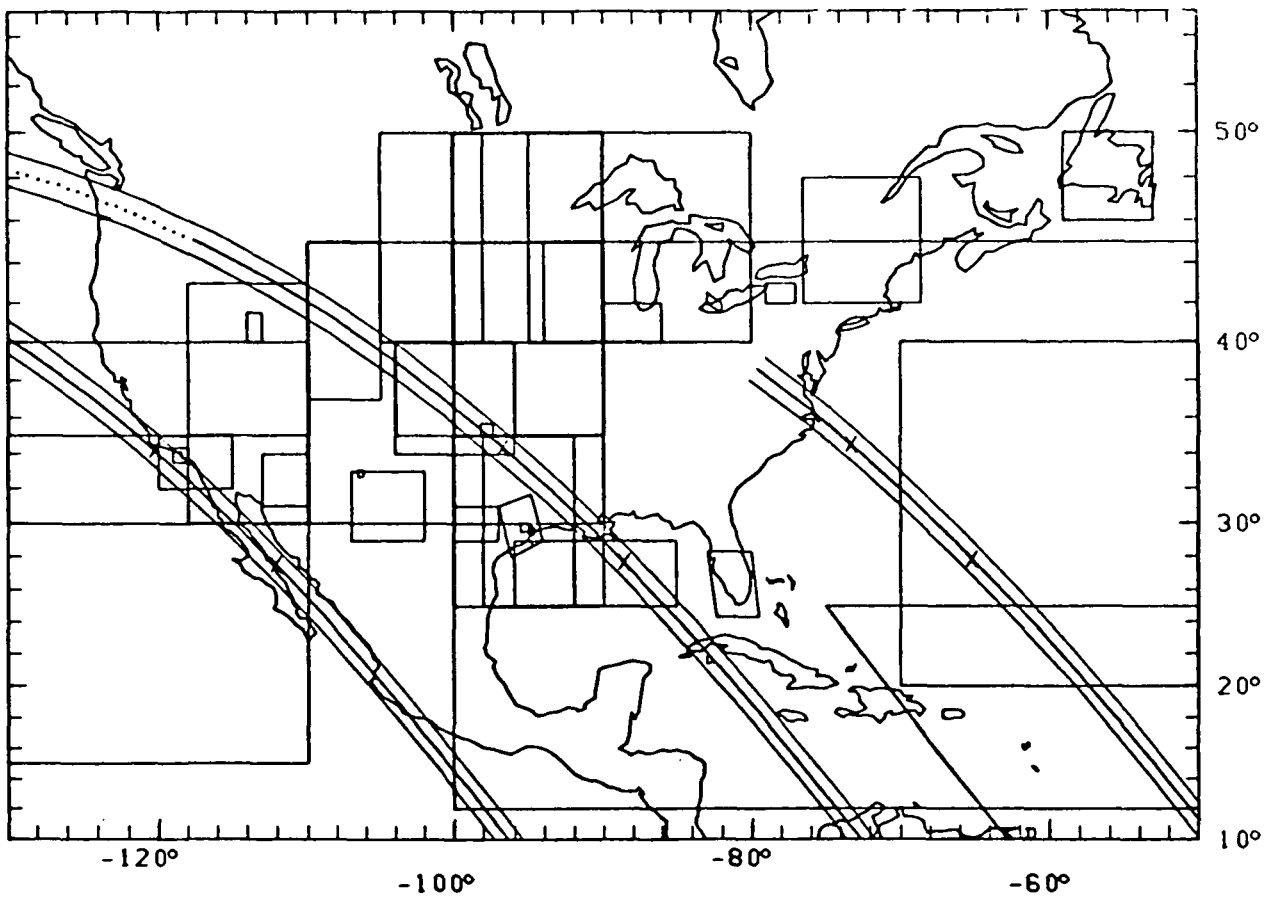
REV 2965-66 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



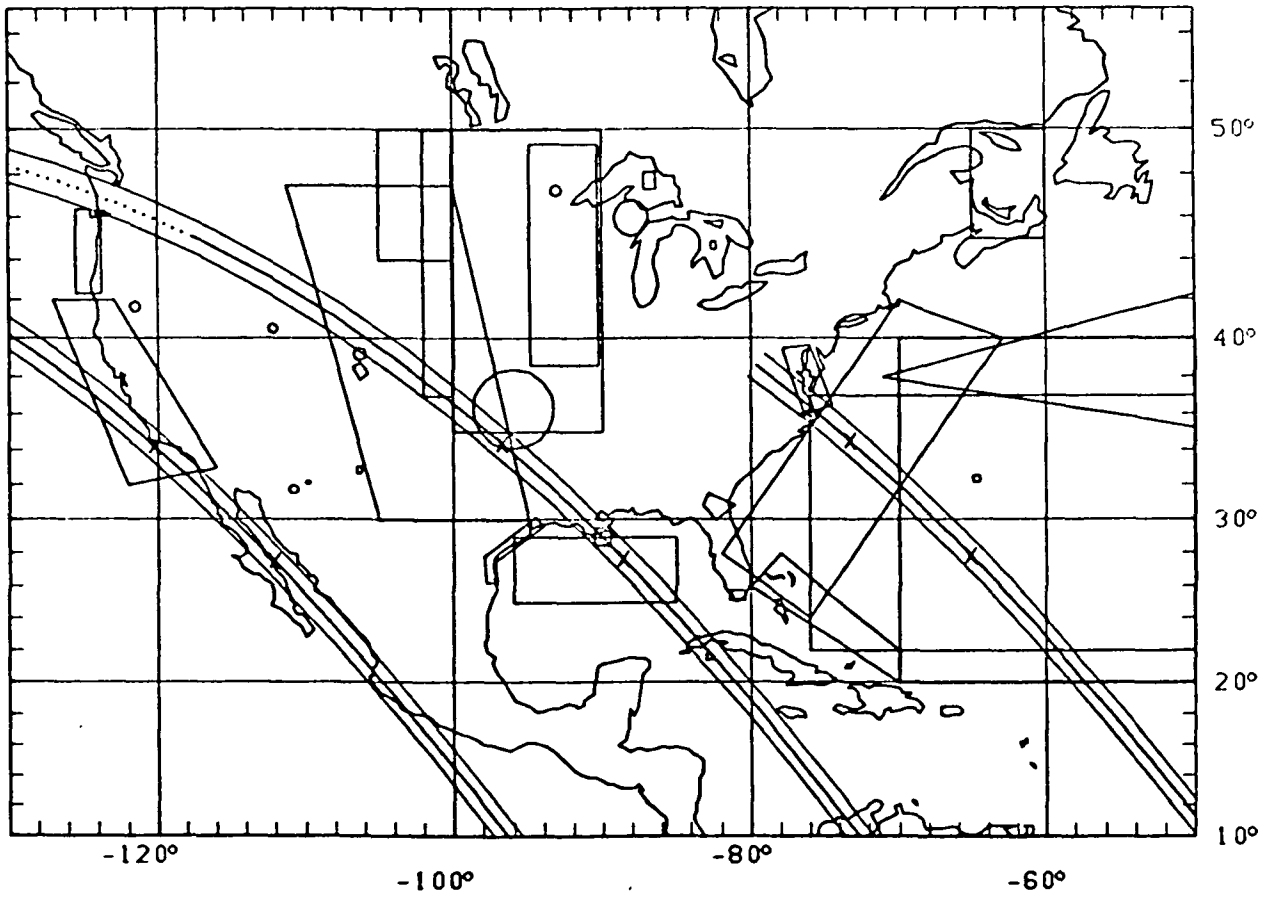
REV 2972-73 SL-4 EREP E,F (SL-1 LAUNCH 4/30/73)



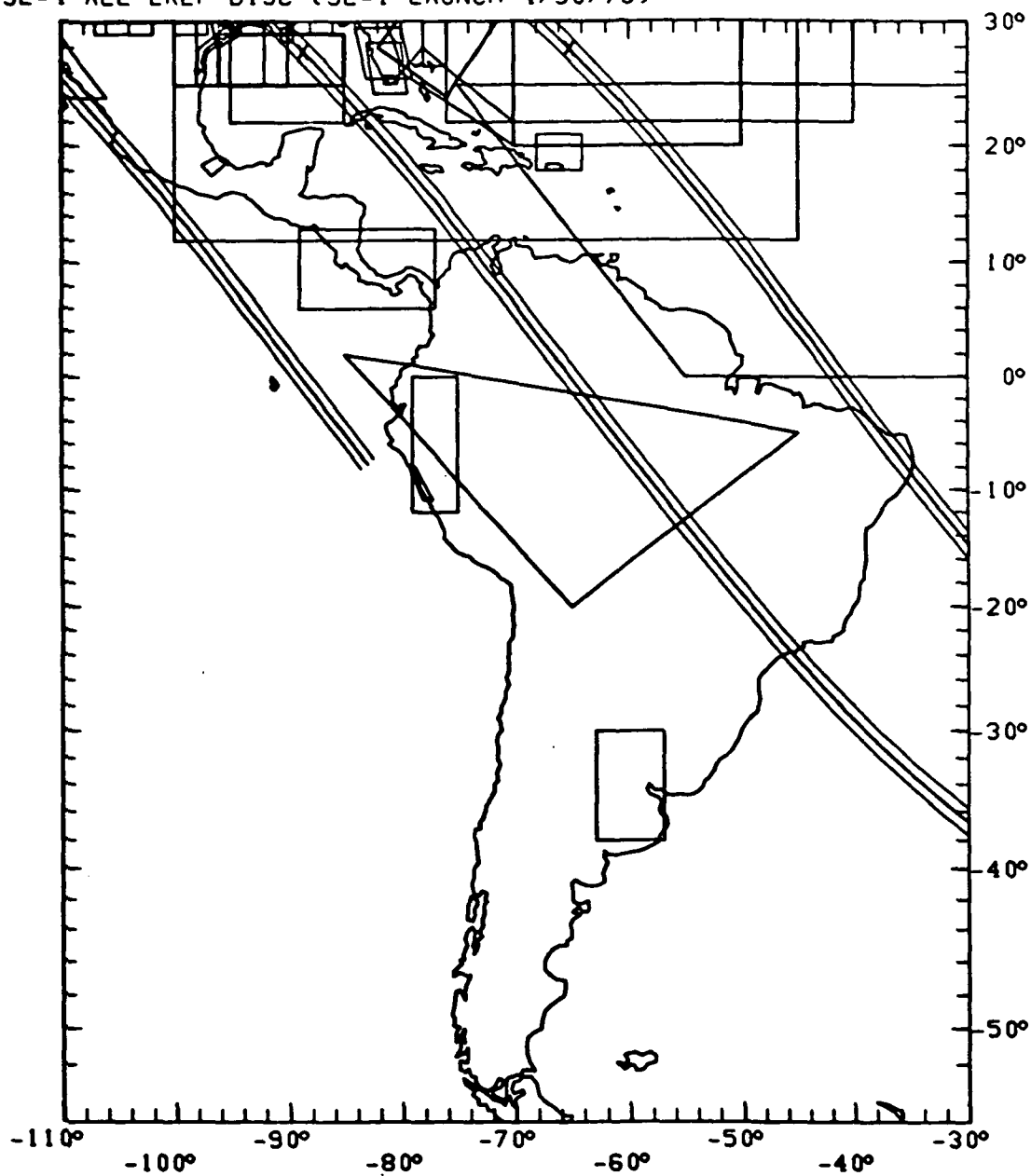
REV 2972-73 SL-4 EREP L.W.P (SL-1 LAUNCH 4/30/73)



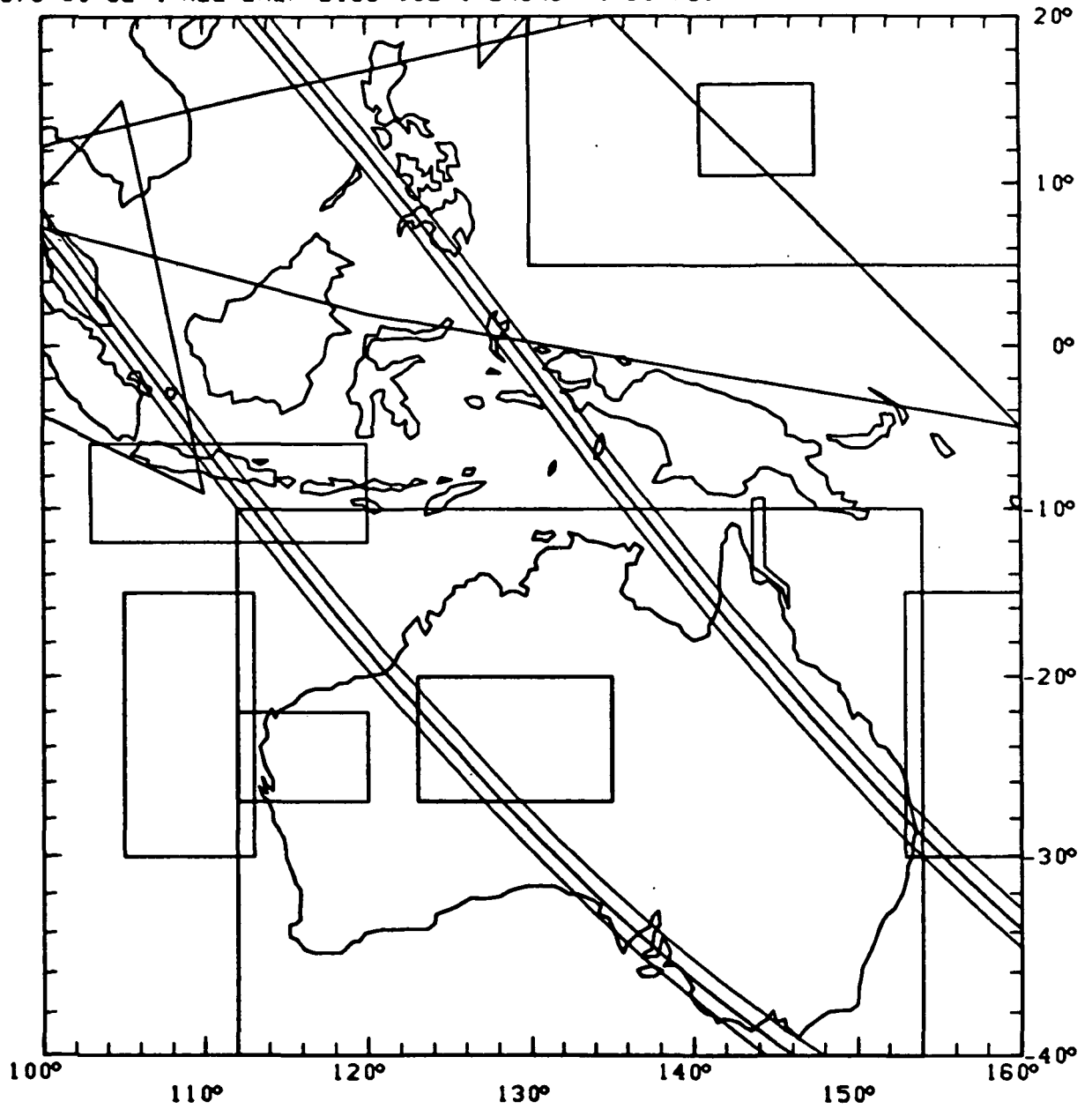
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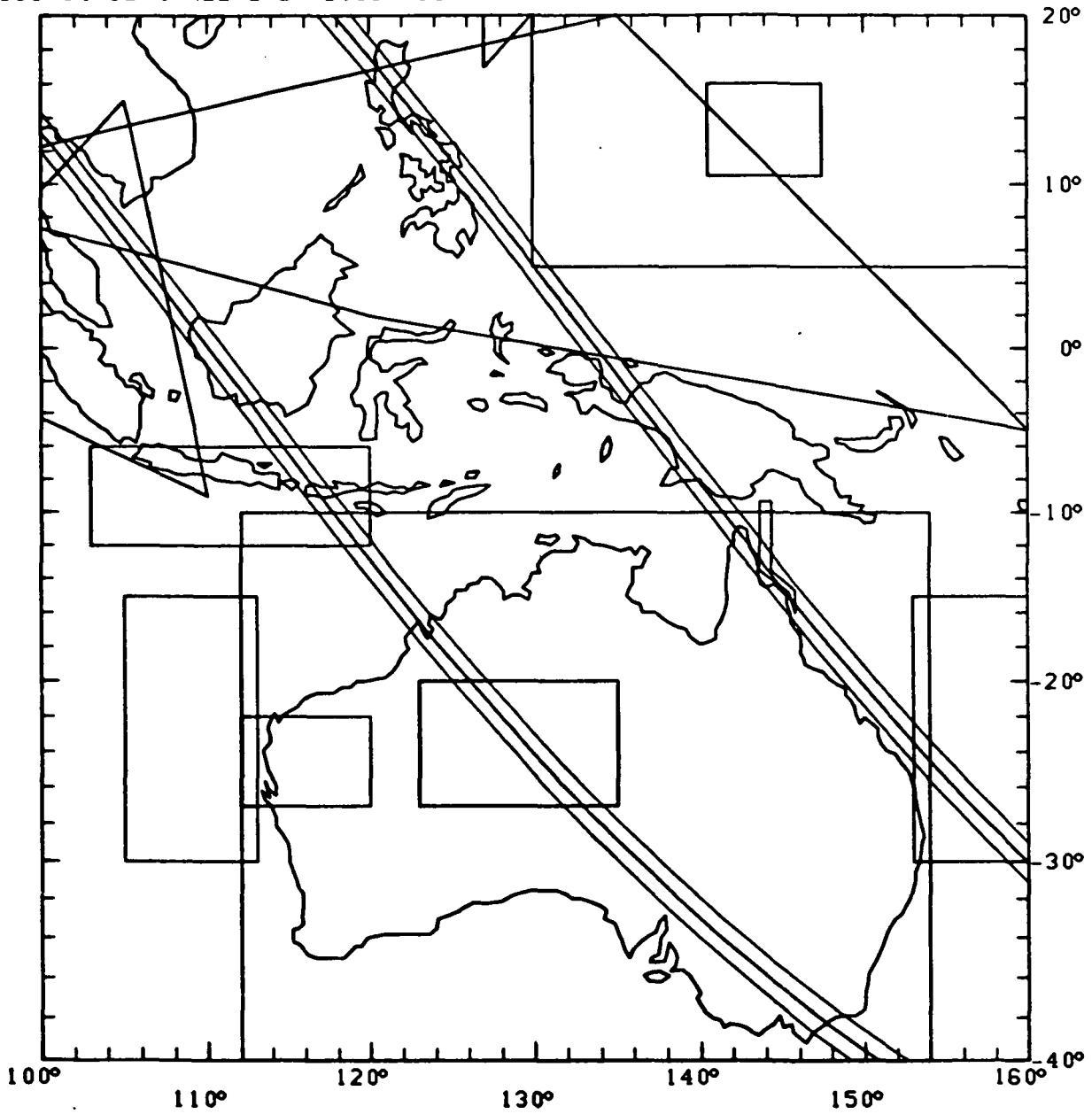
REV 2972-73 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



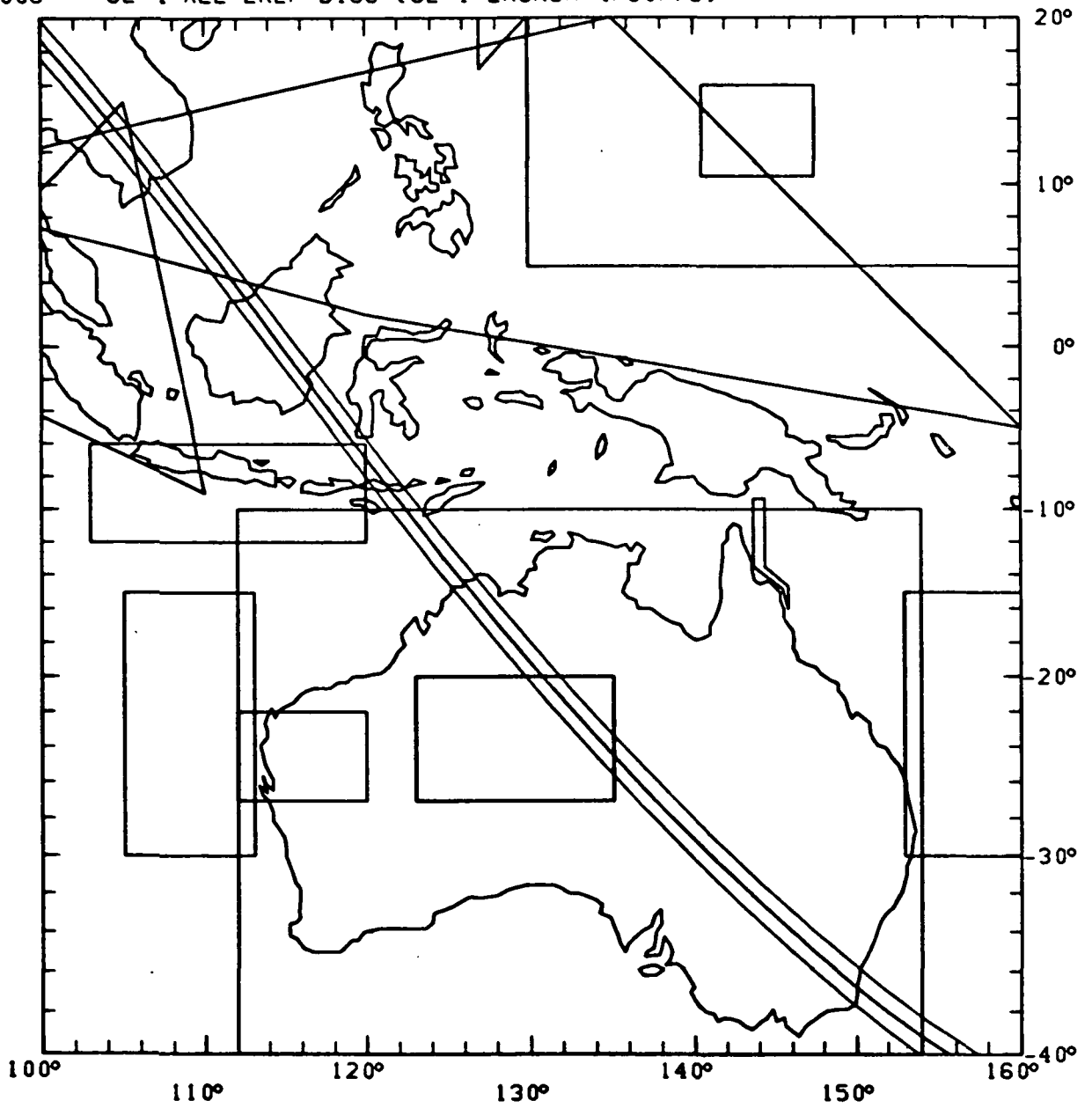
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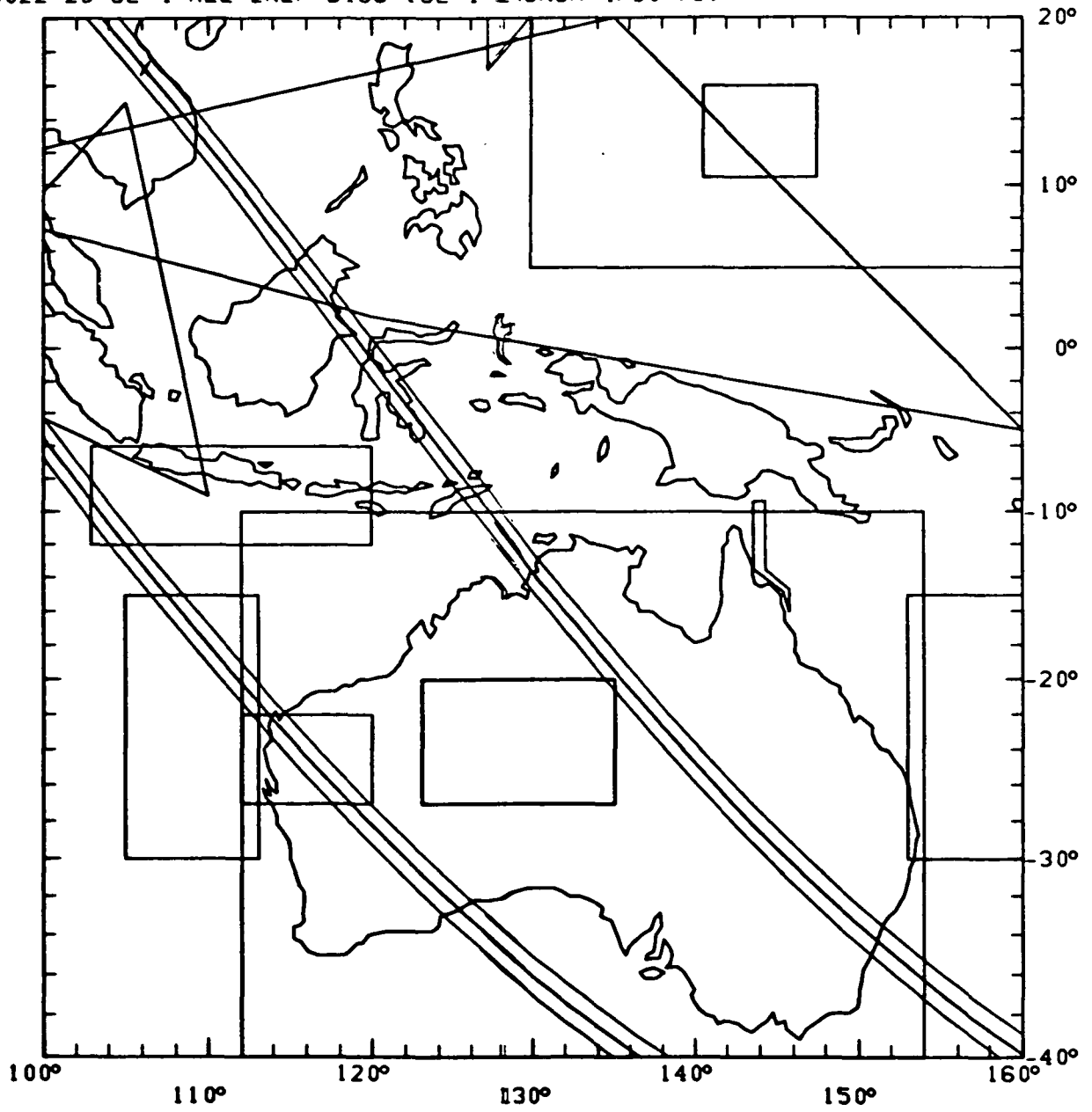
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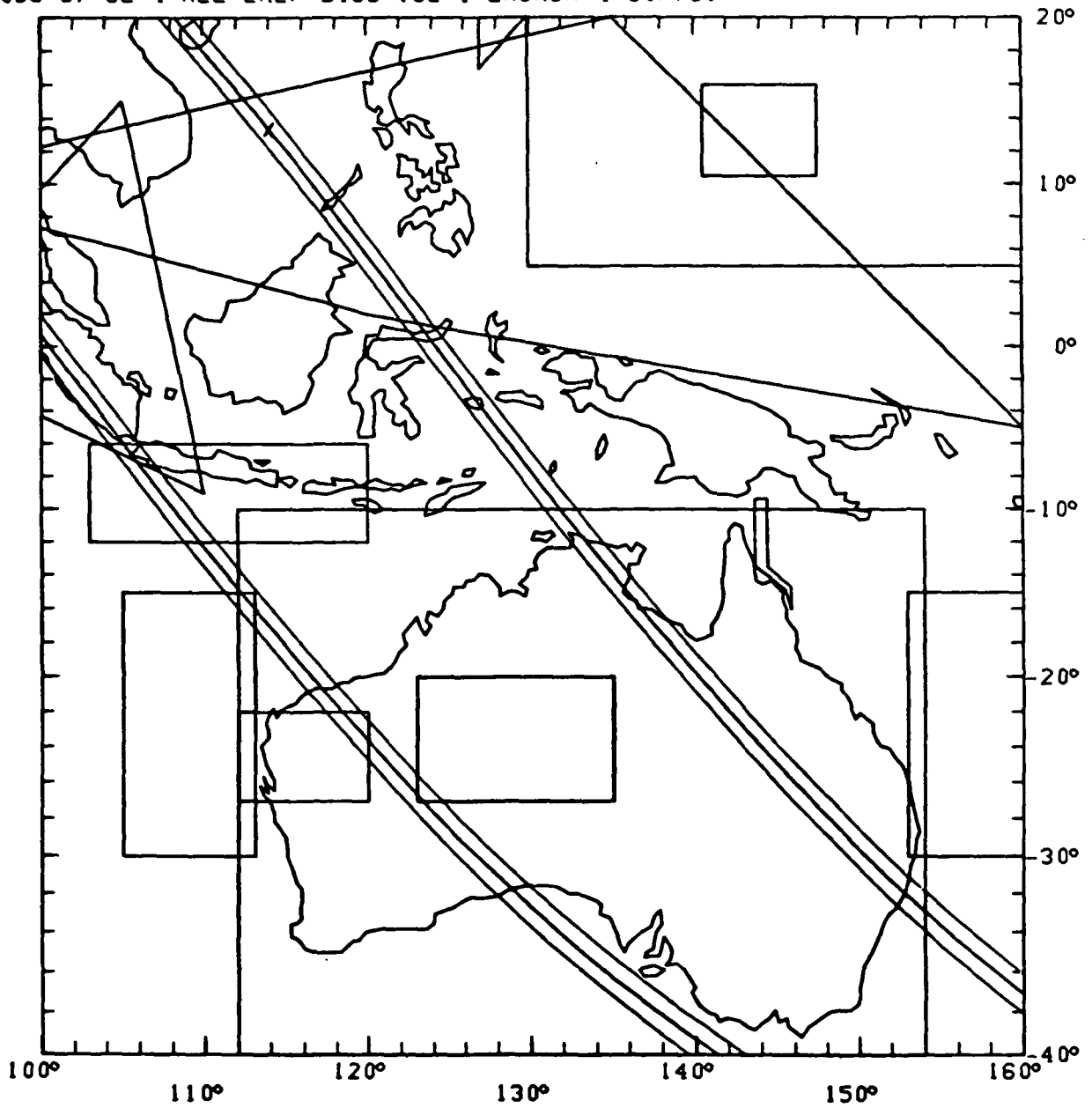
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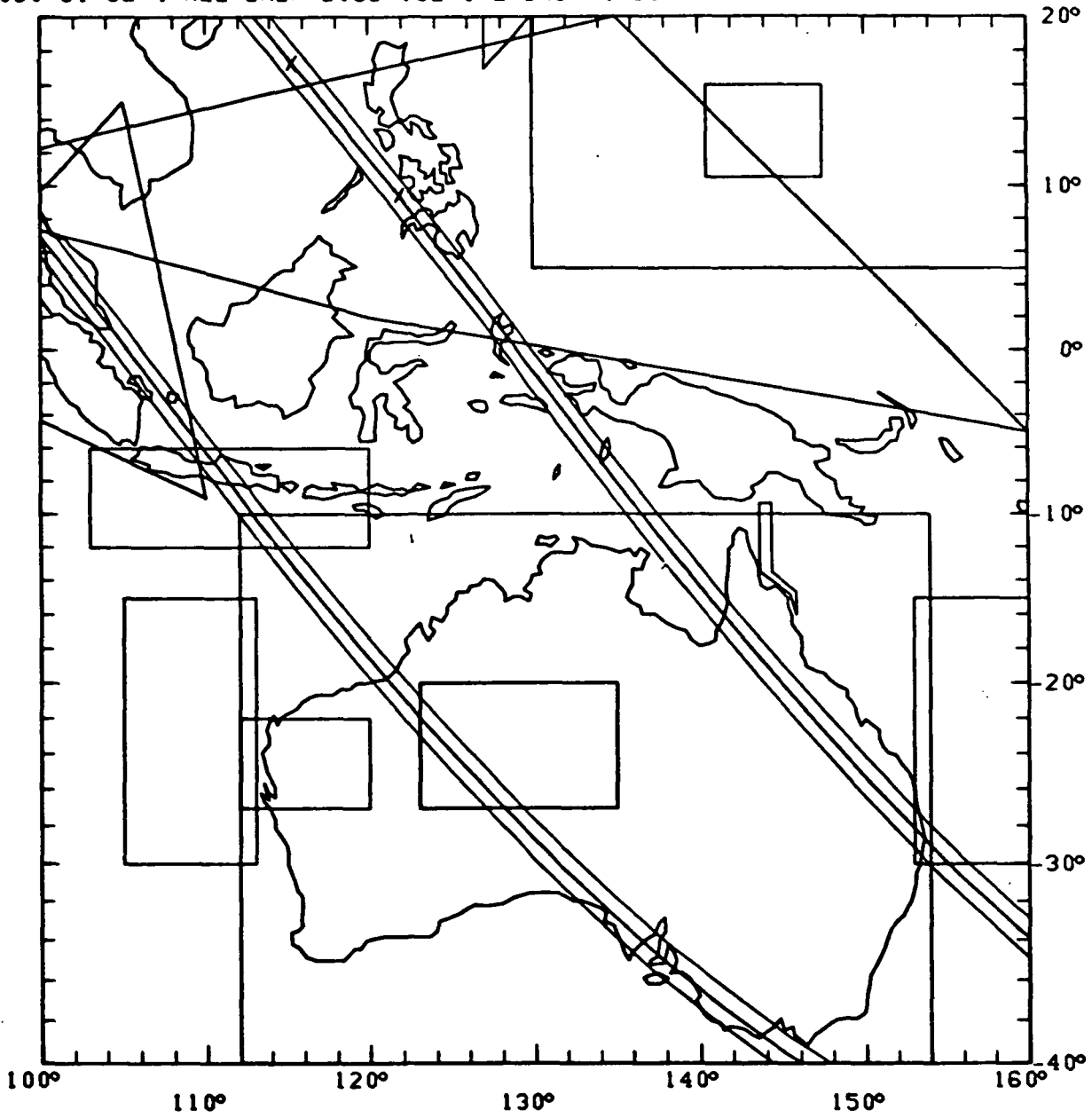
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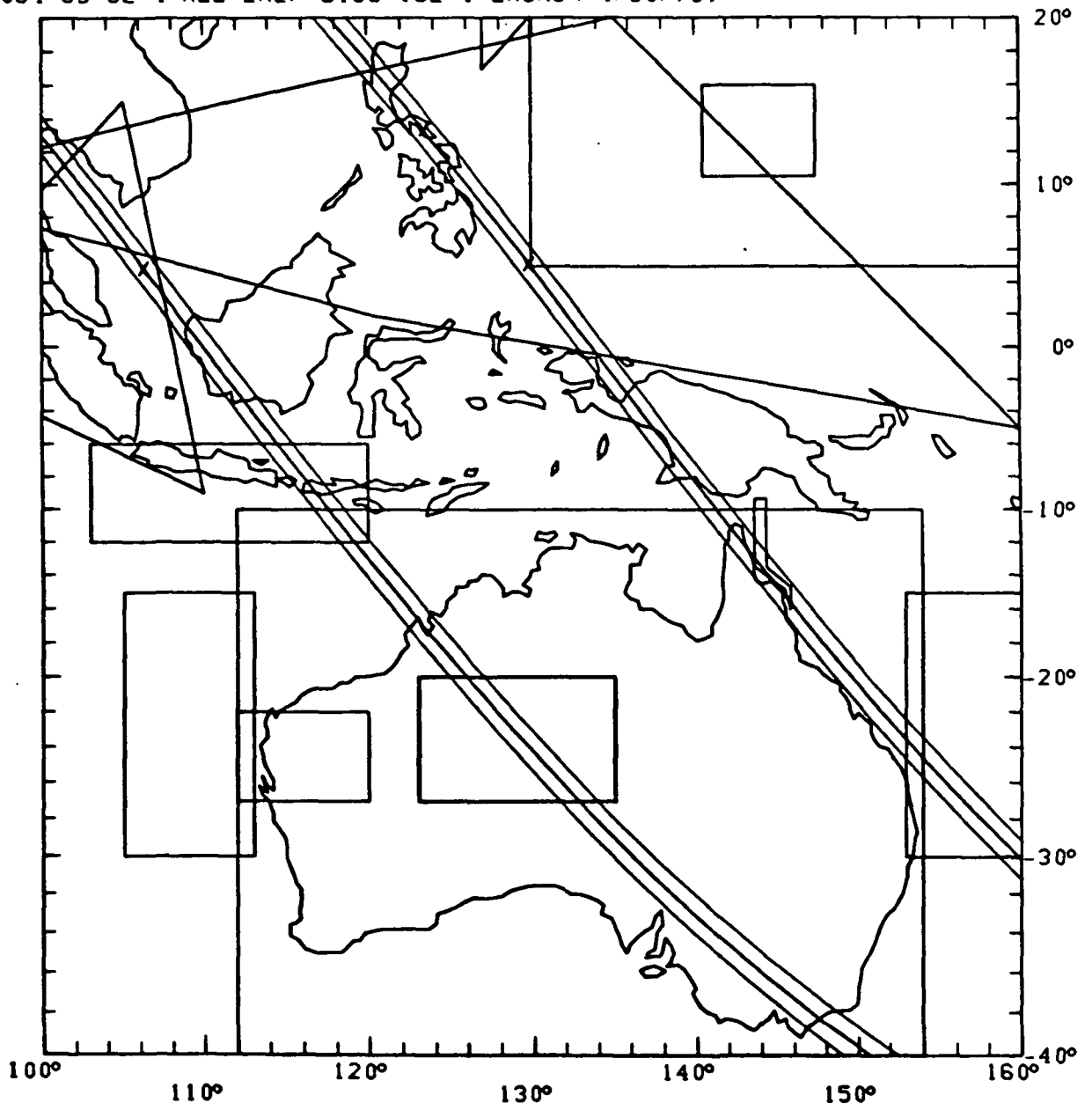
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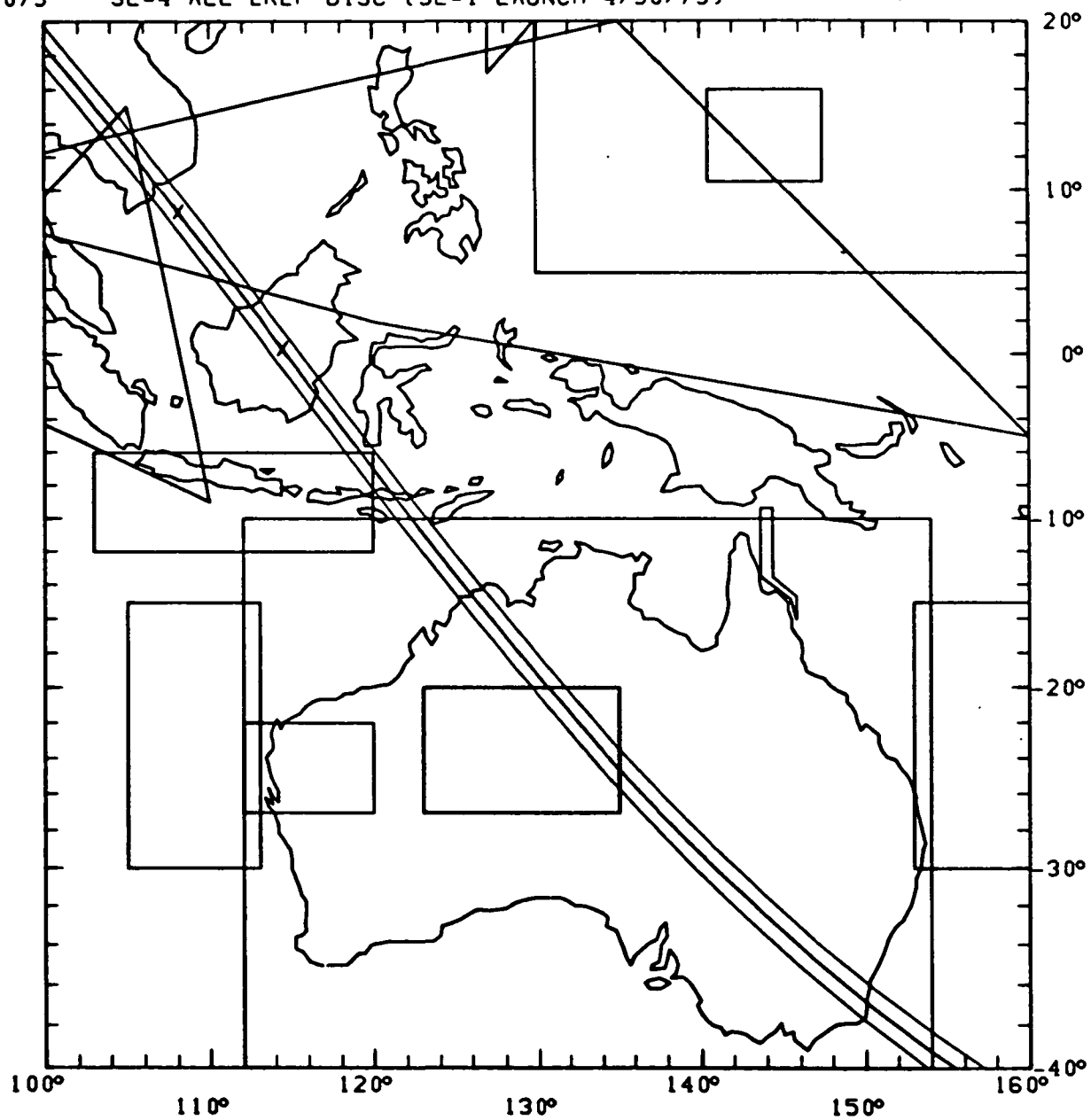
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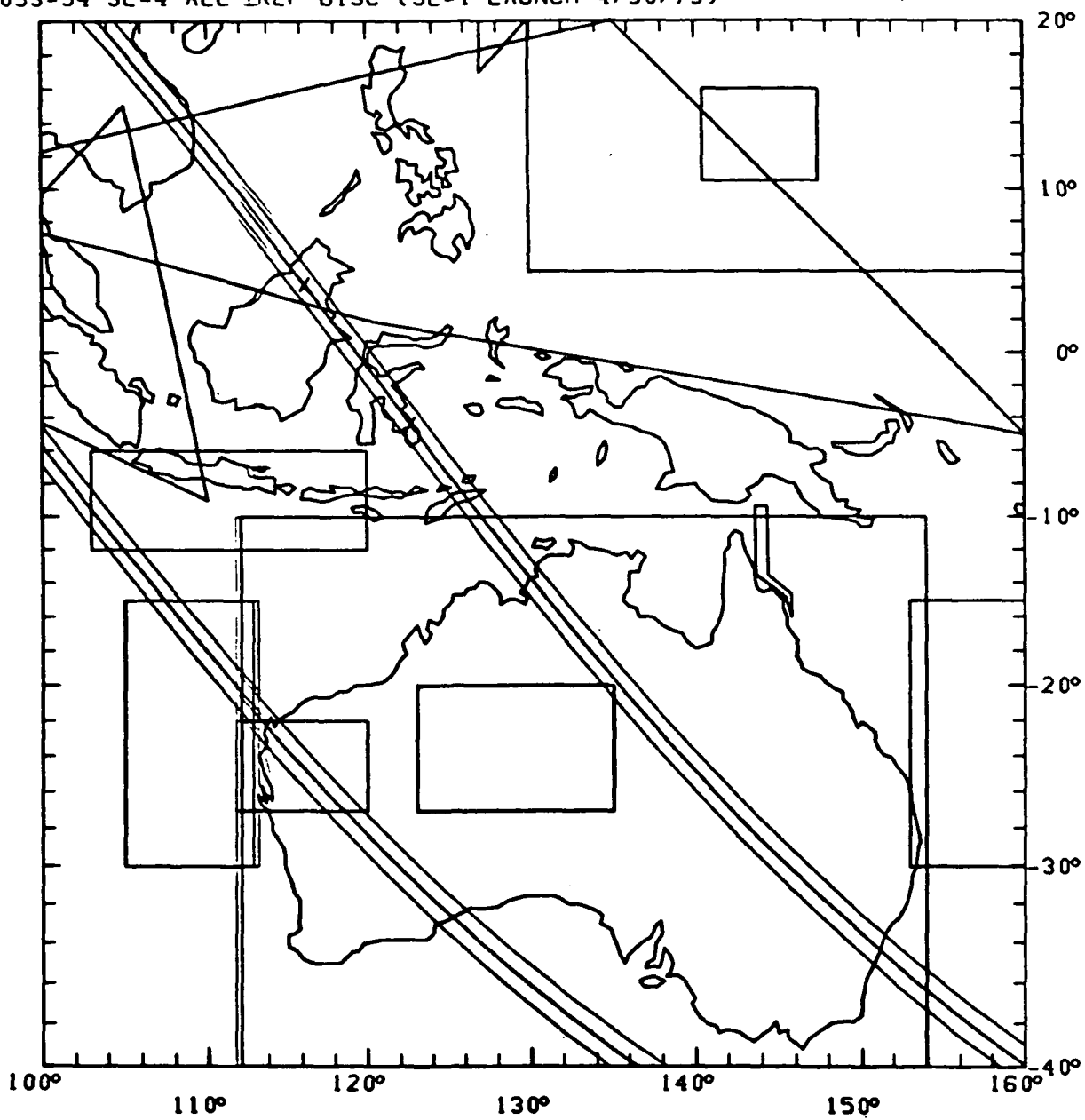
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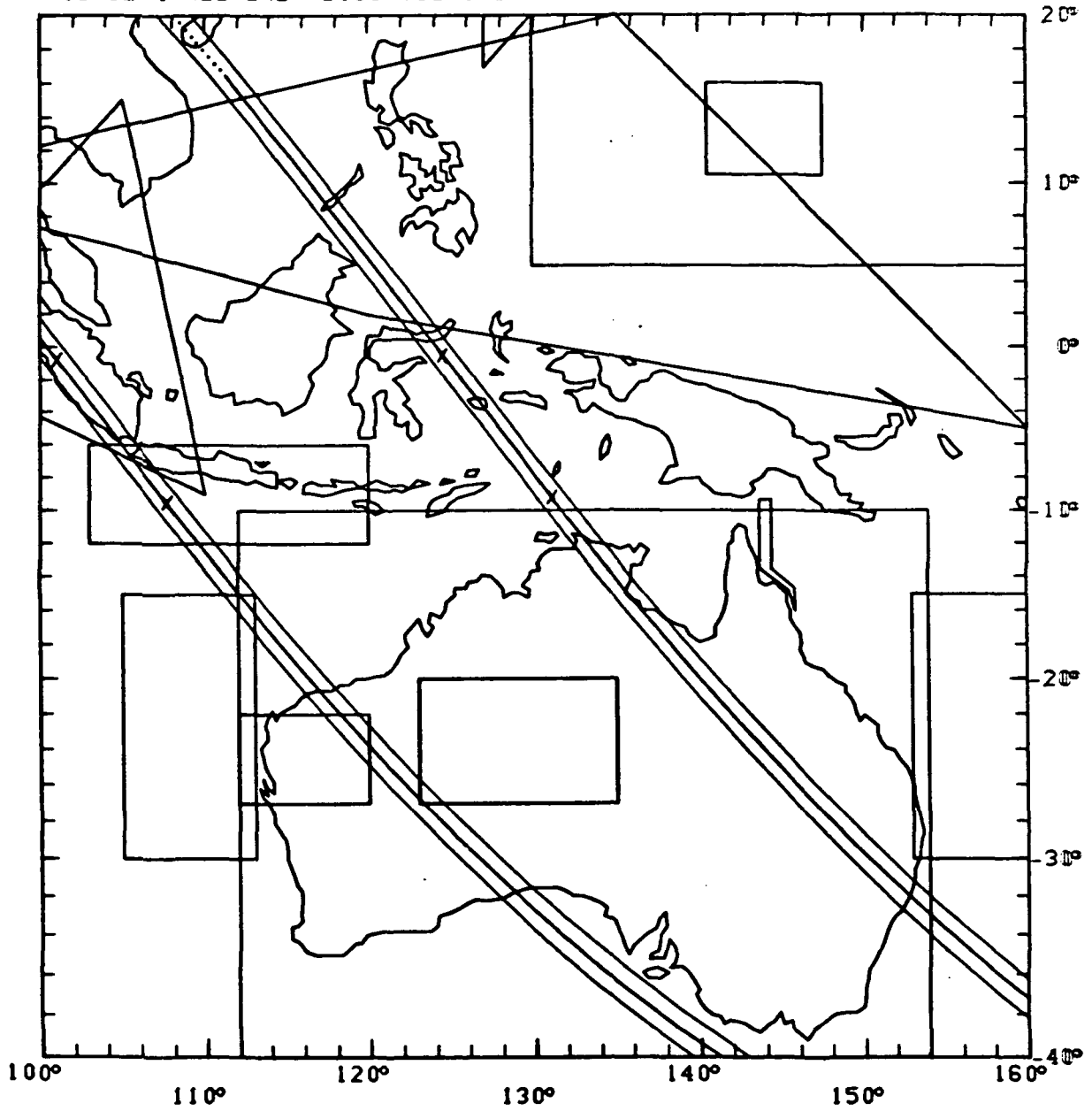
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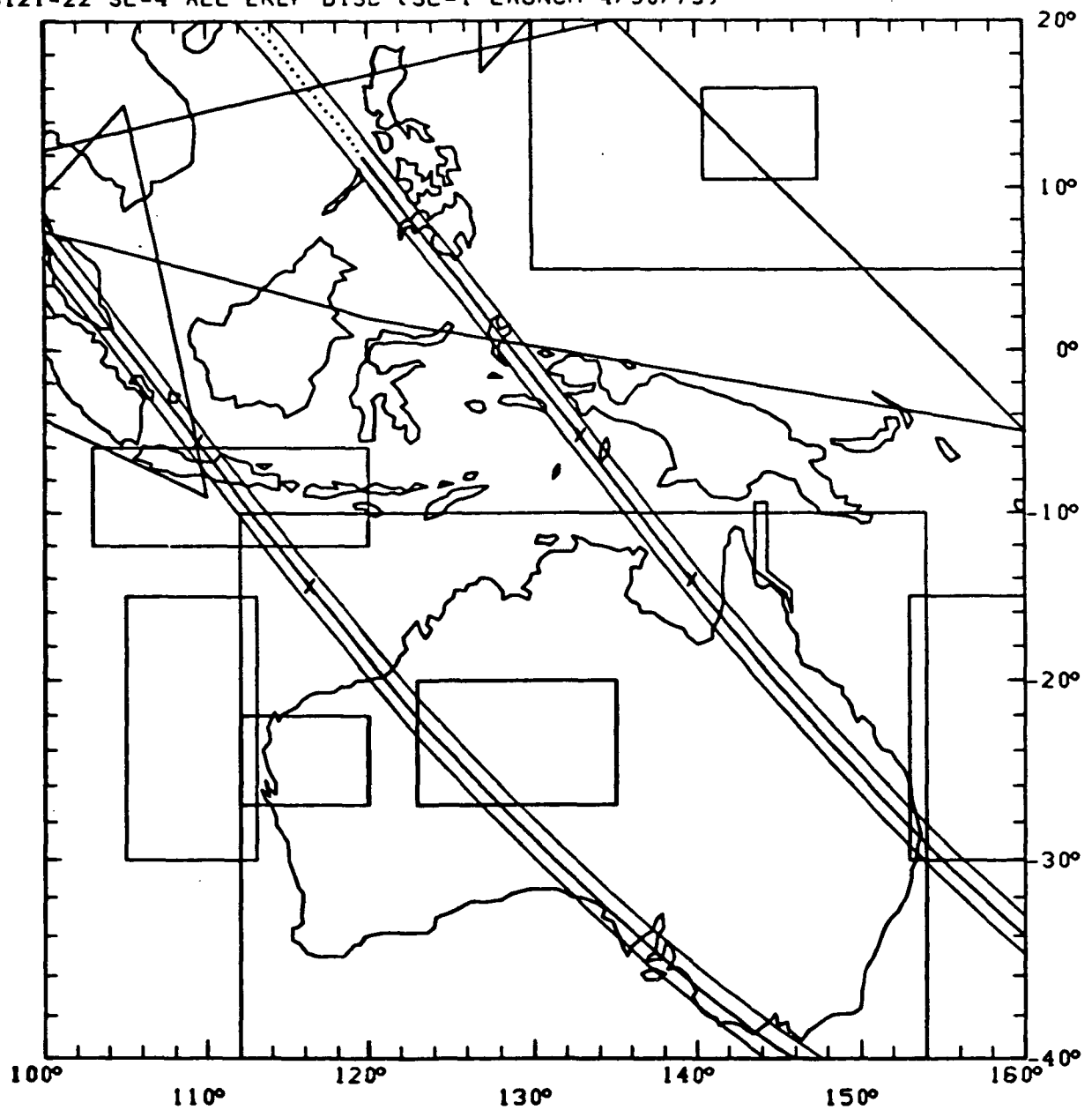
REV 3093-94 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



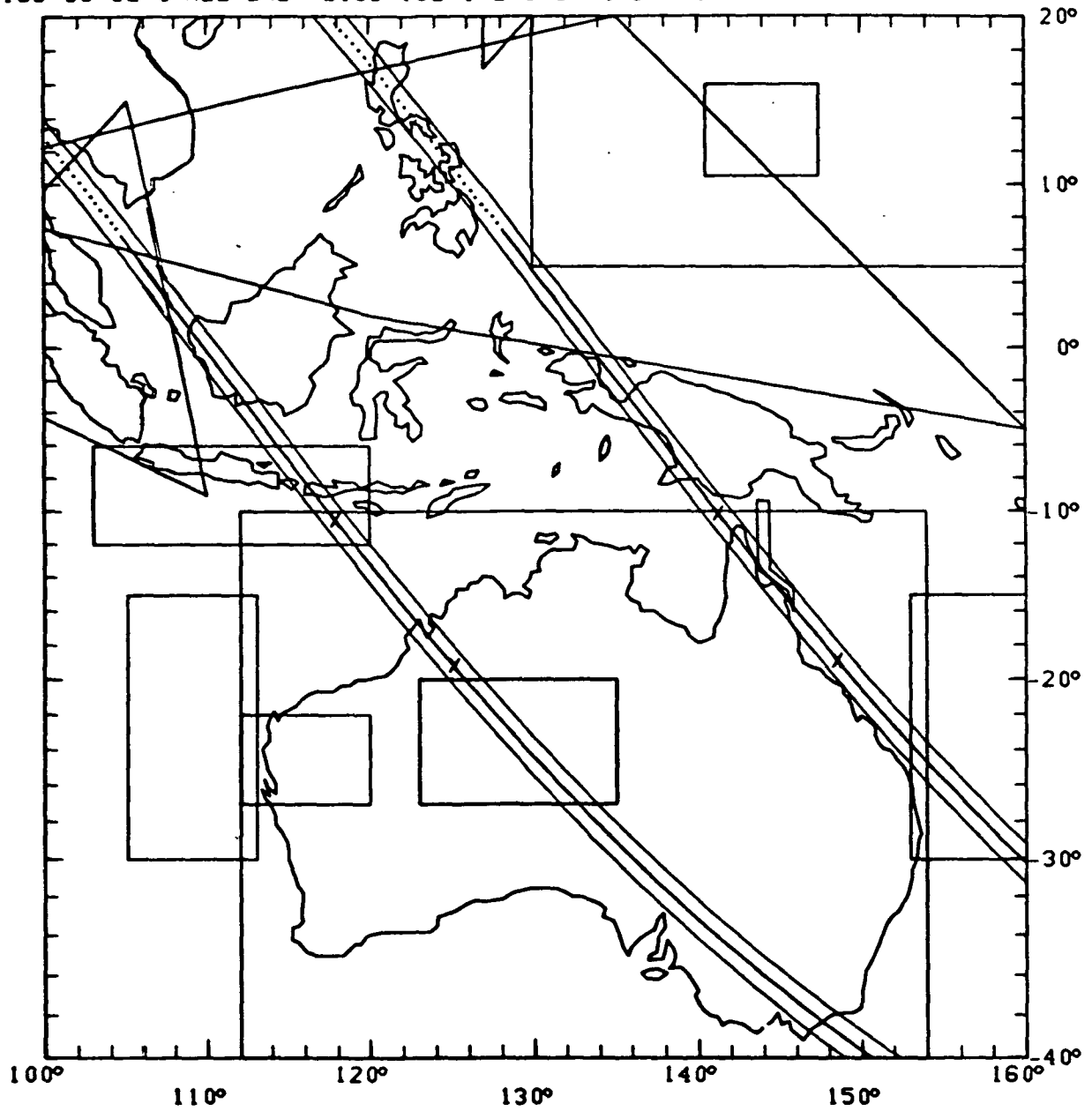
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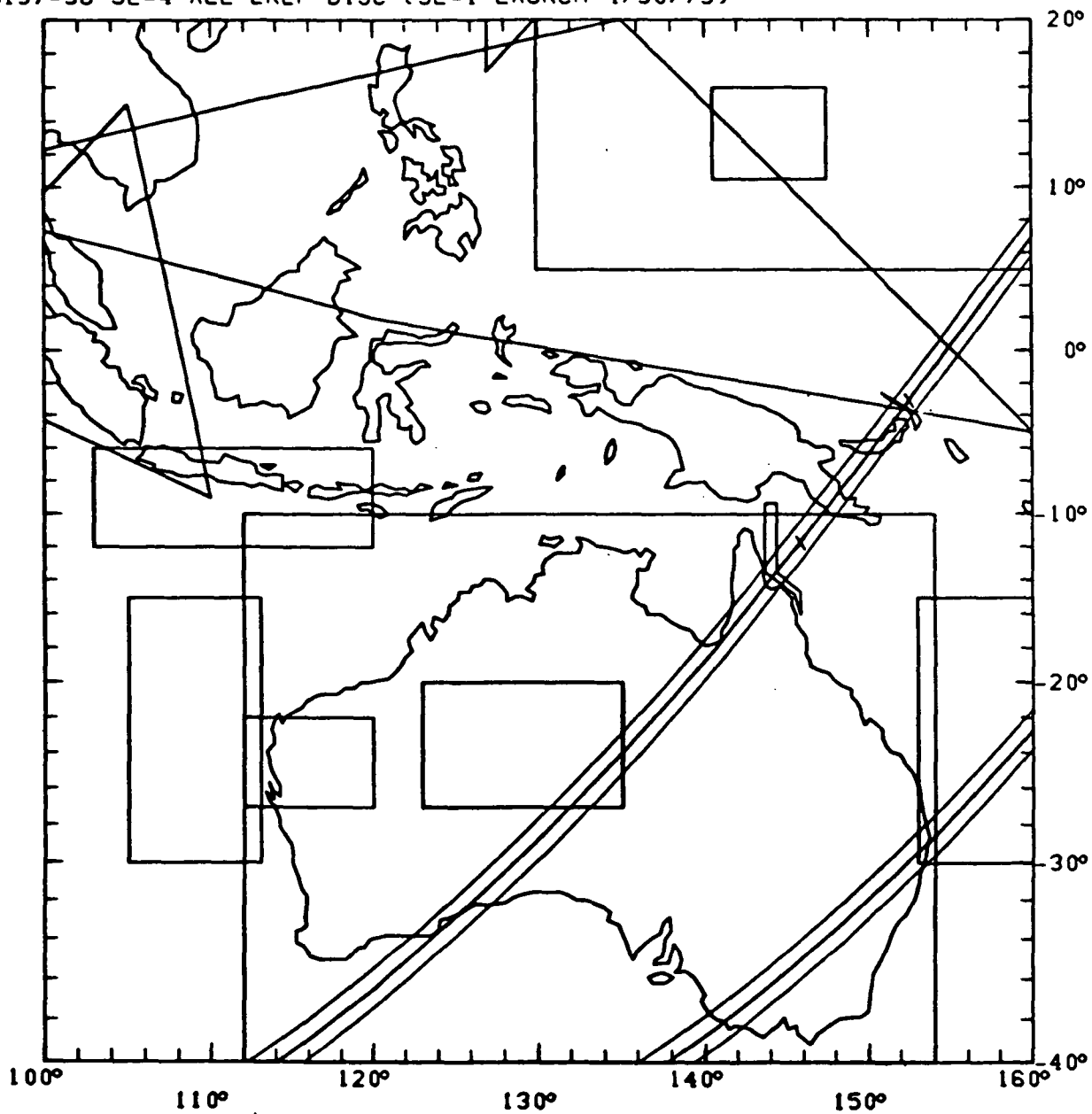
REV 3121-22 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



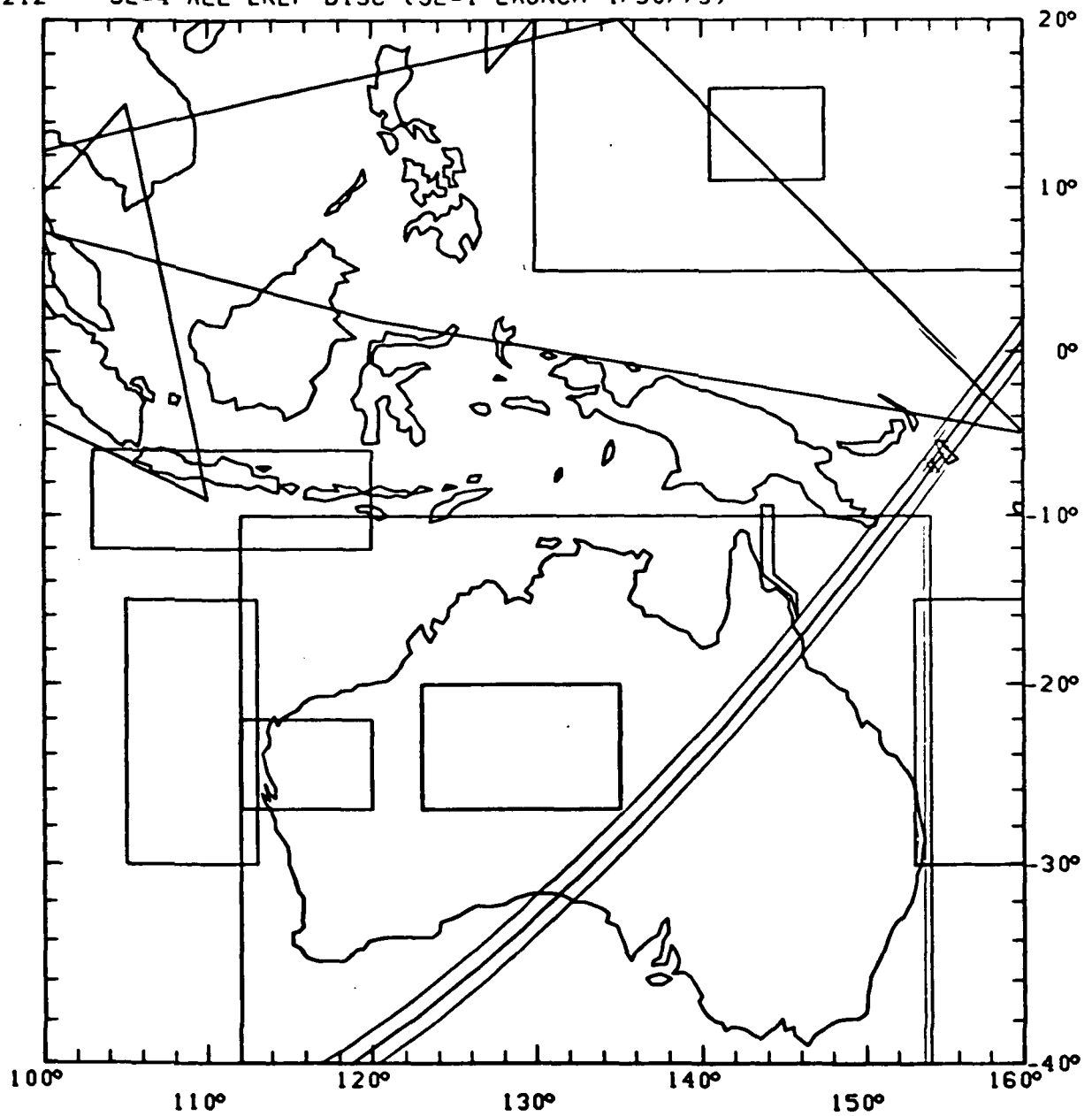
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REV 3197-98 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)

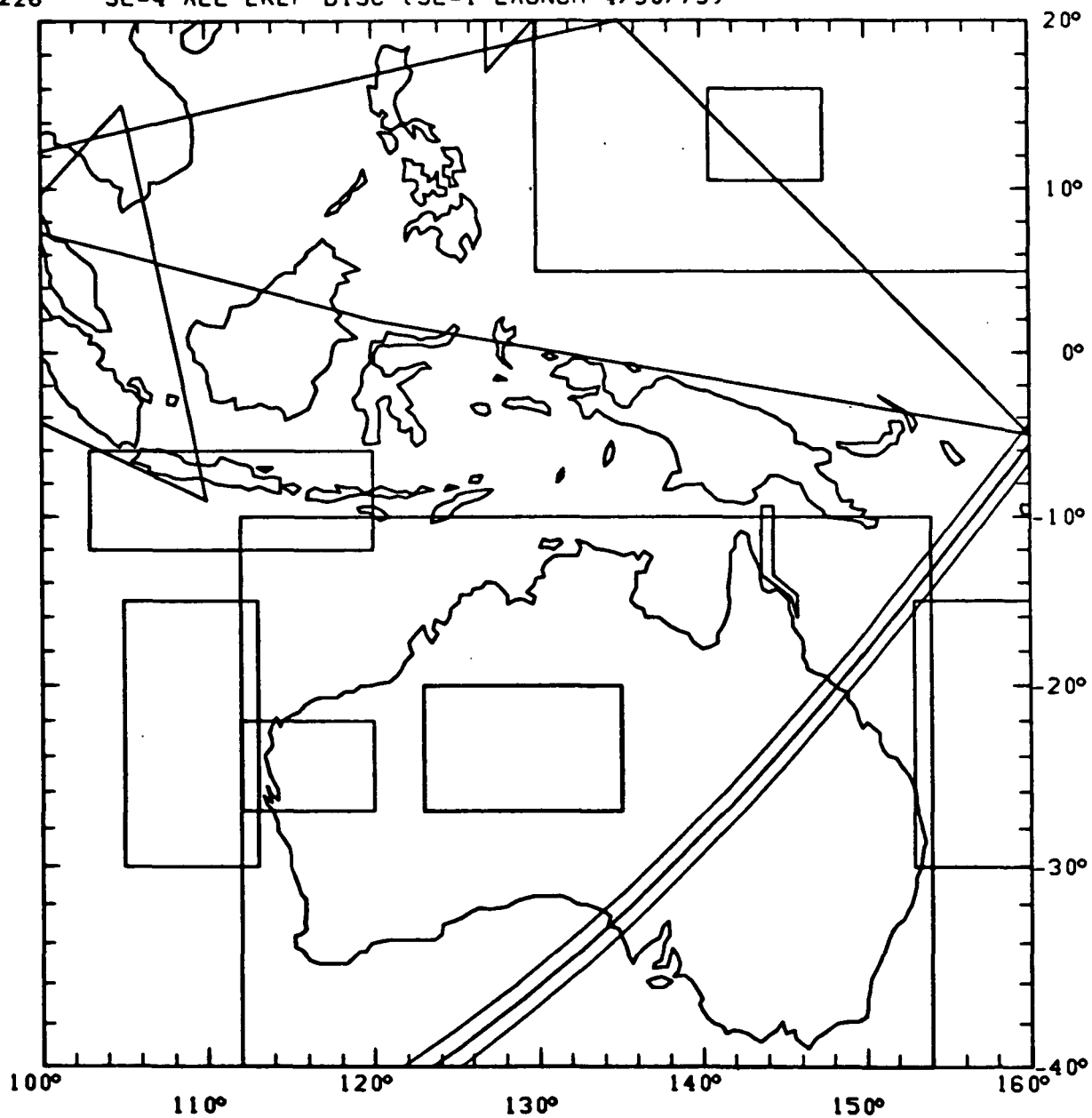


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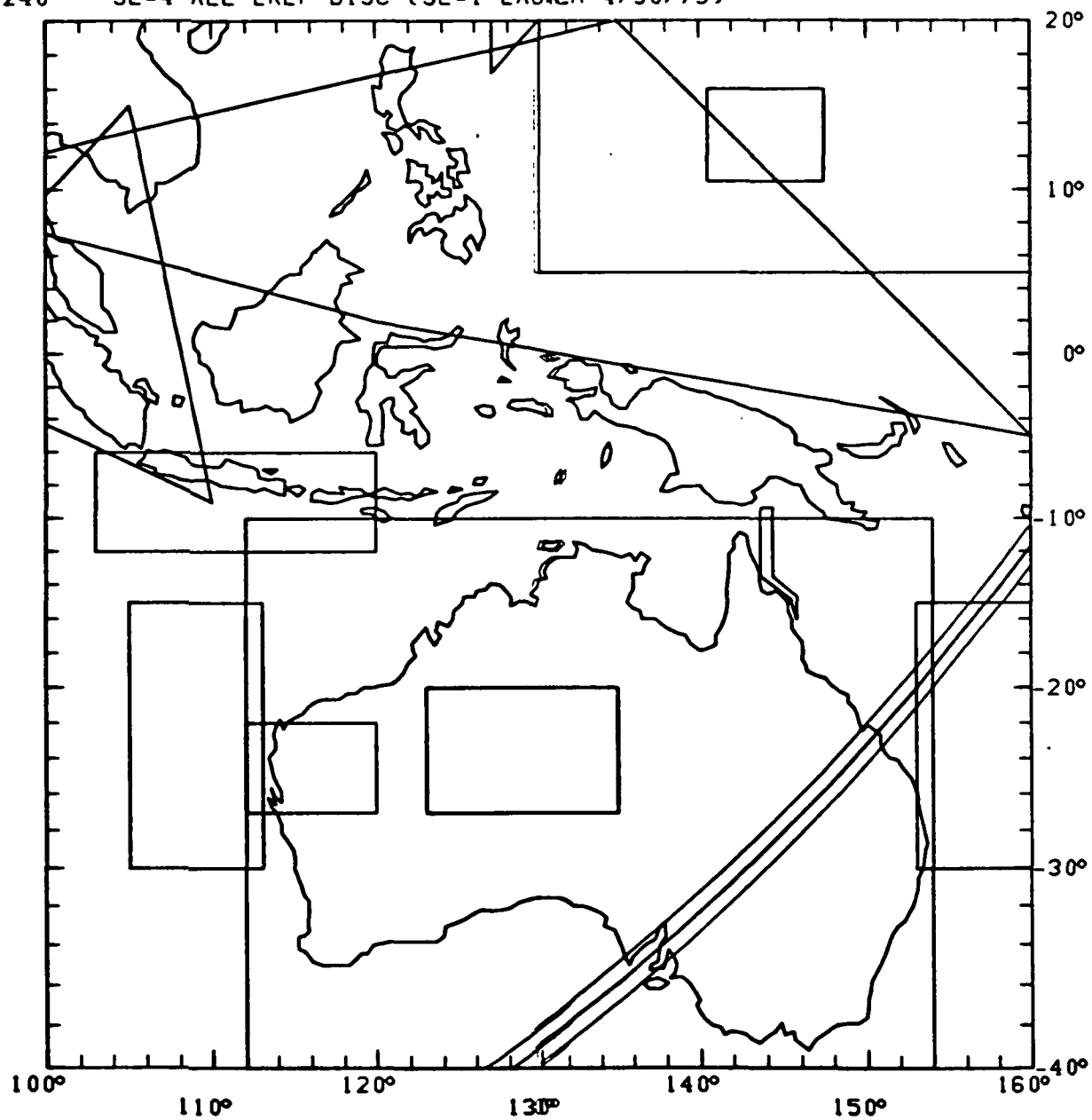
REV 3226

SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)

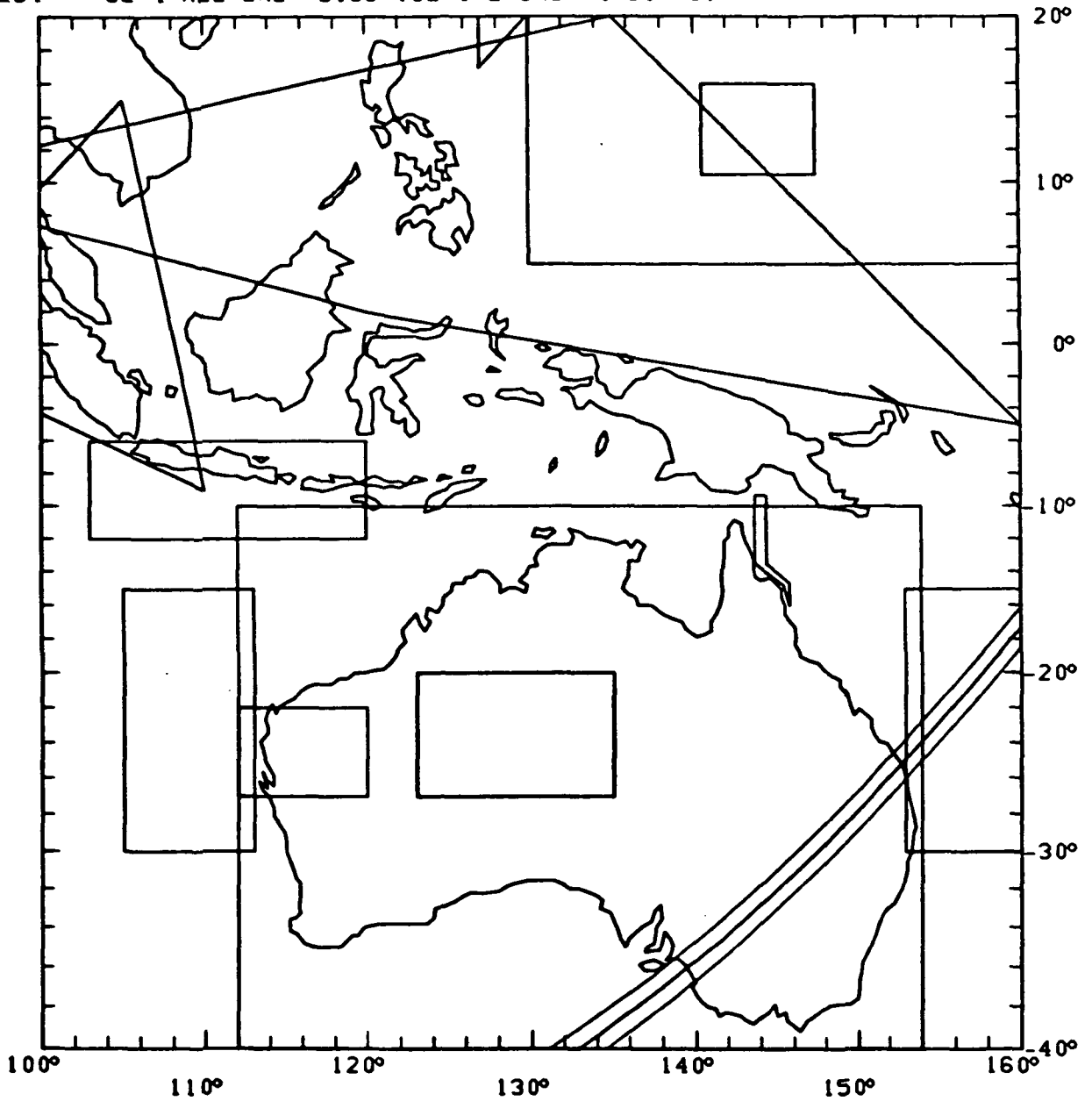


REV 3240

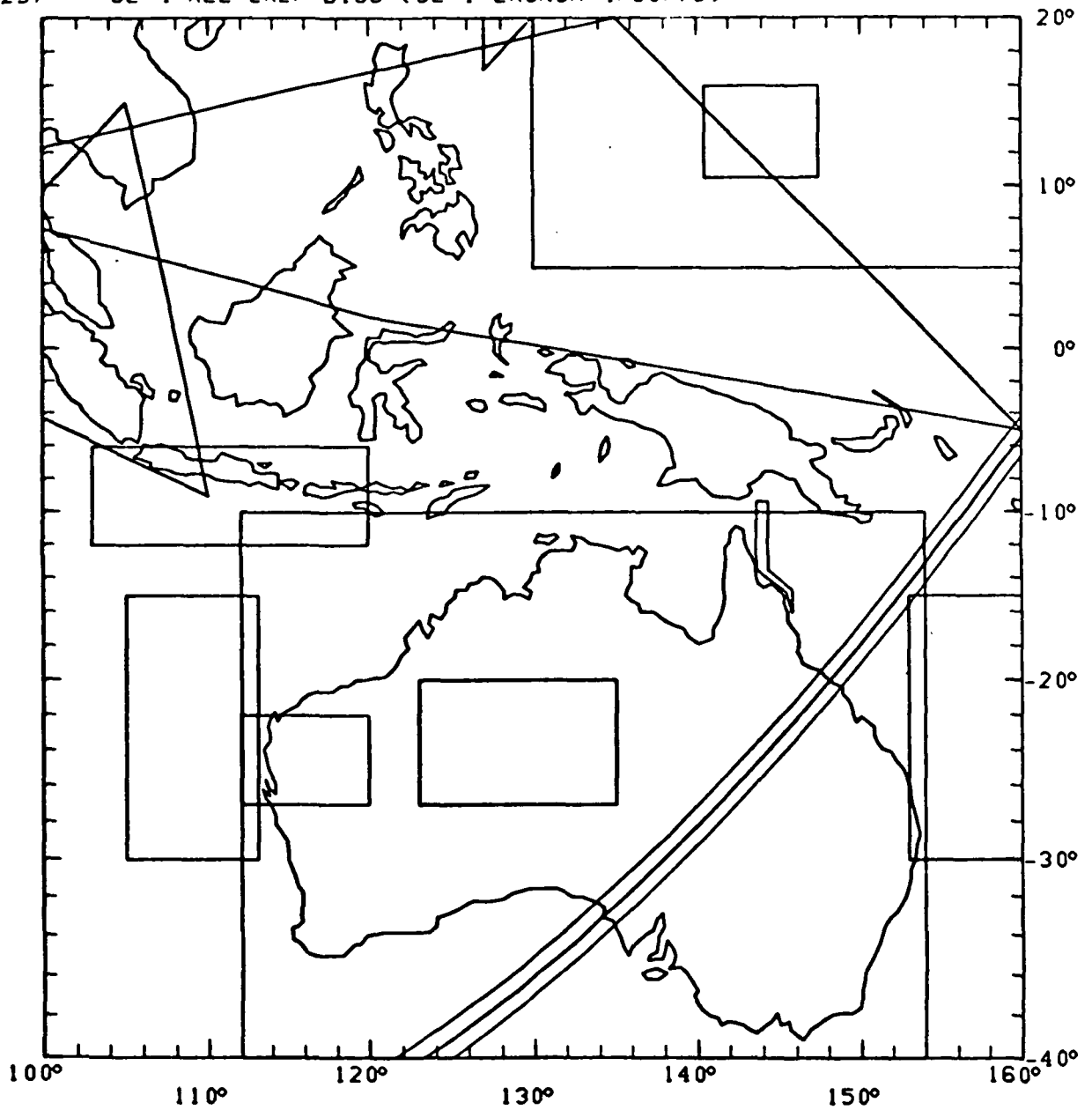
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REV 3254 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)

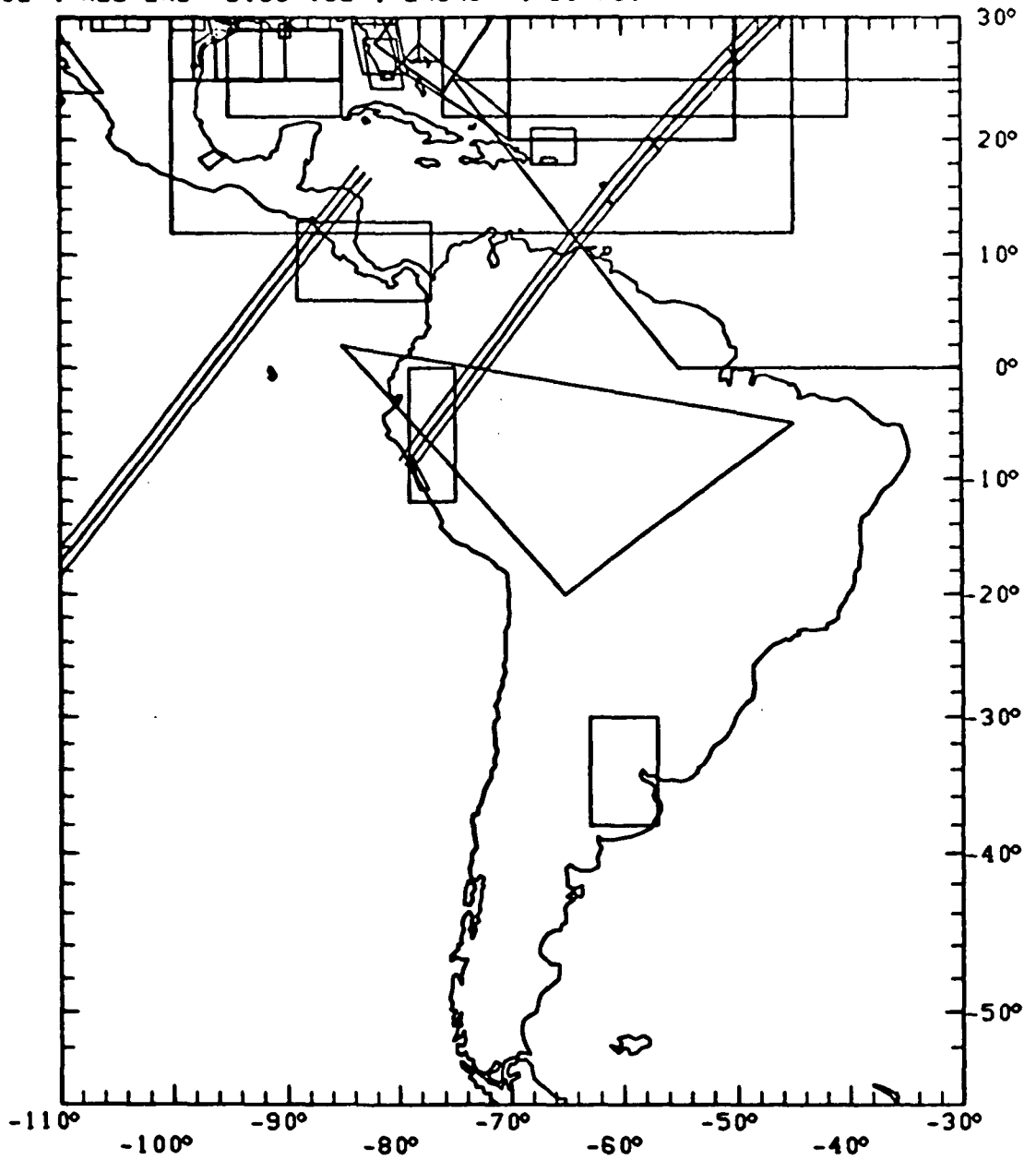


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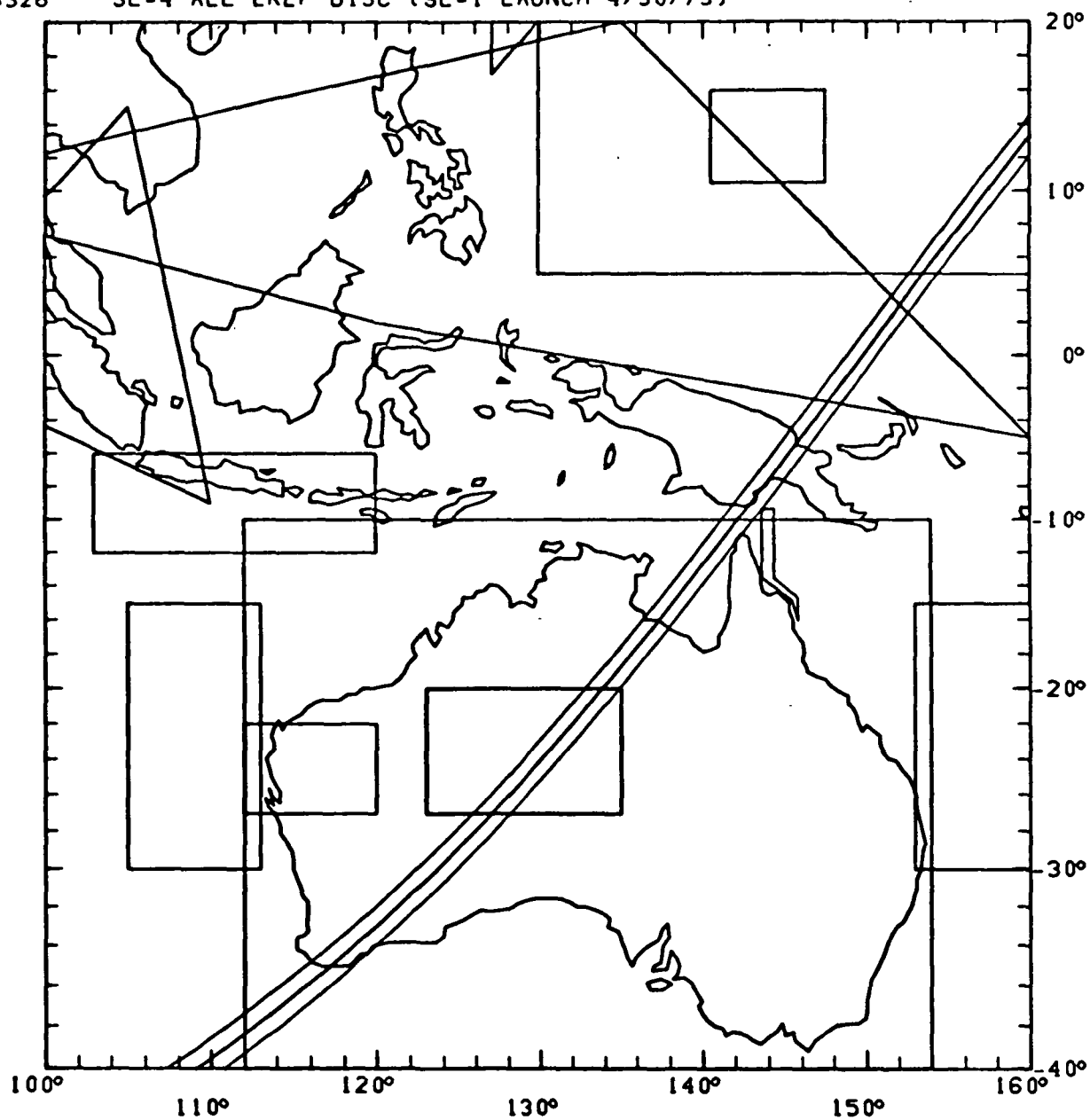


REV 3307

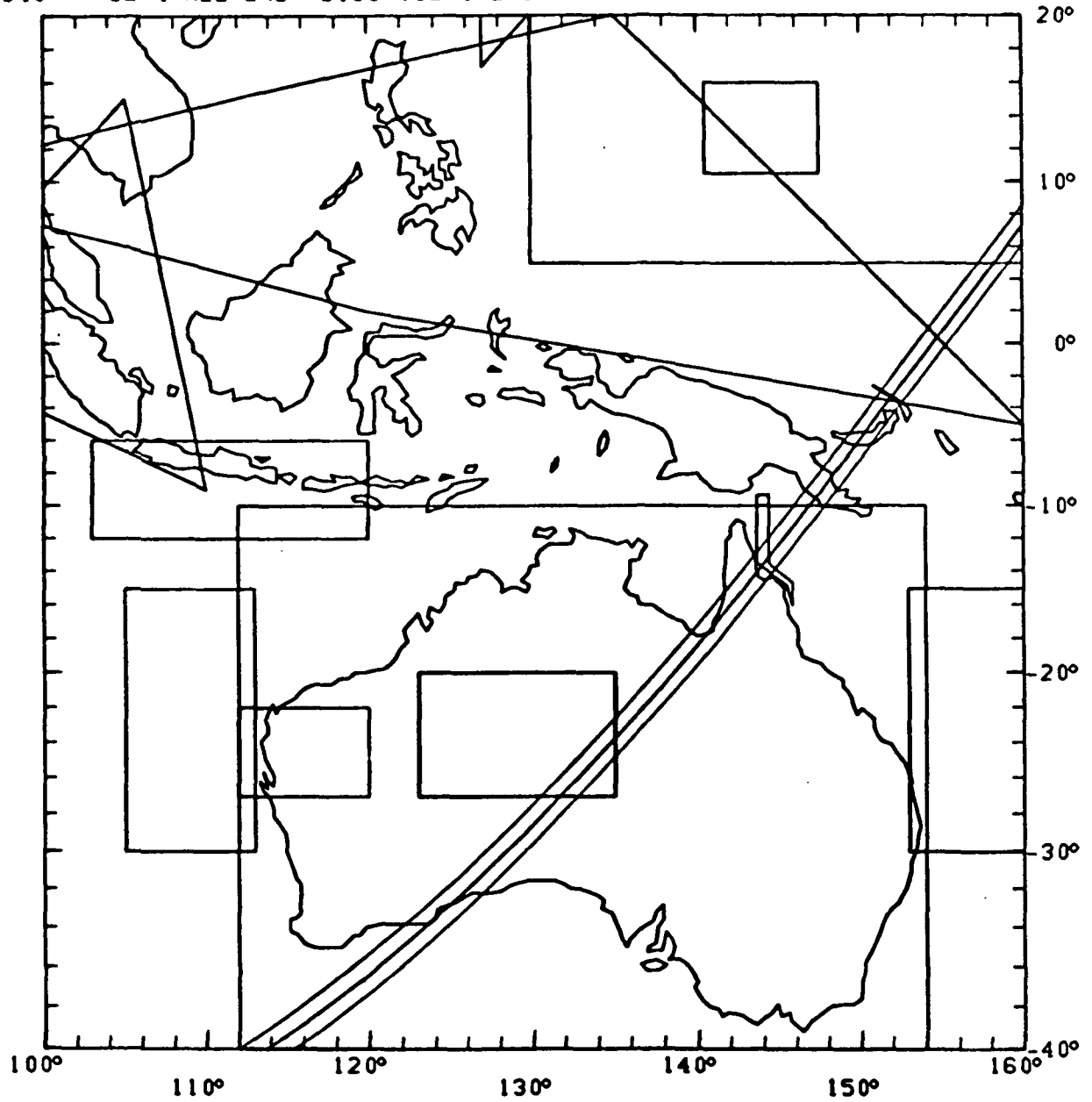
SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



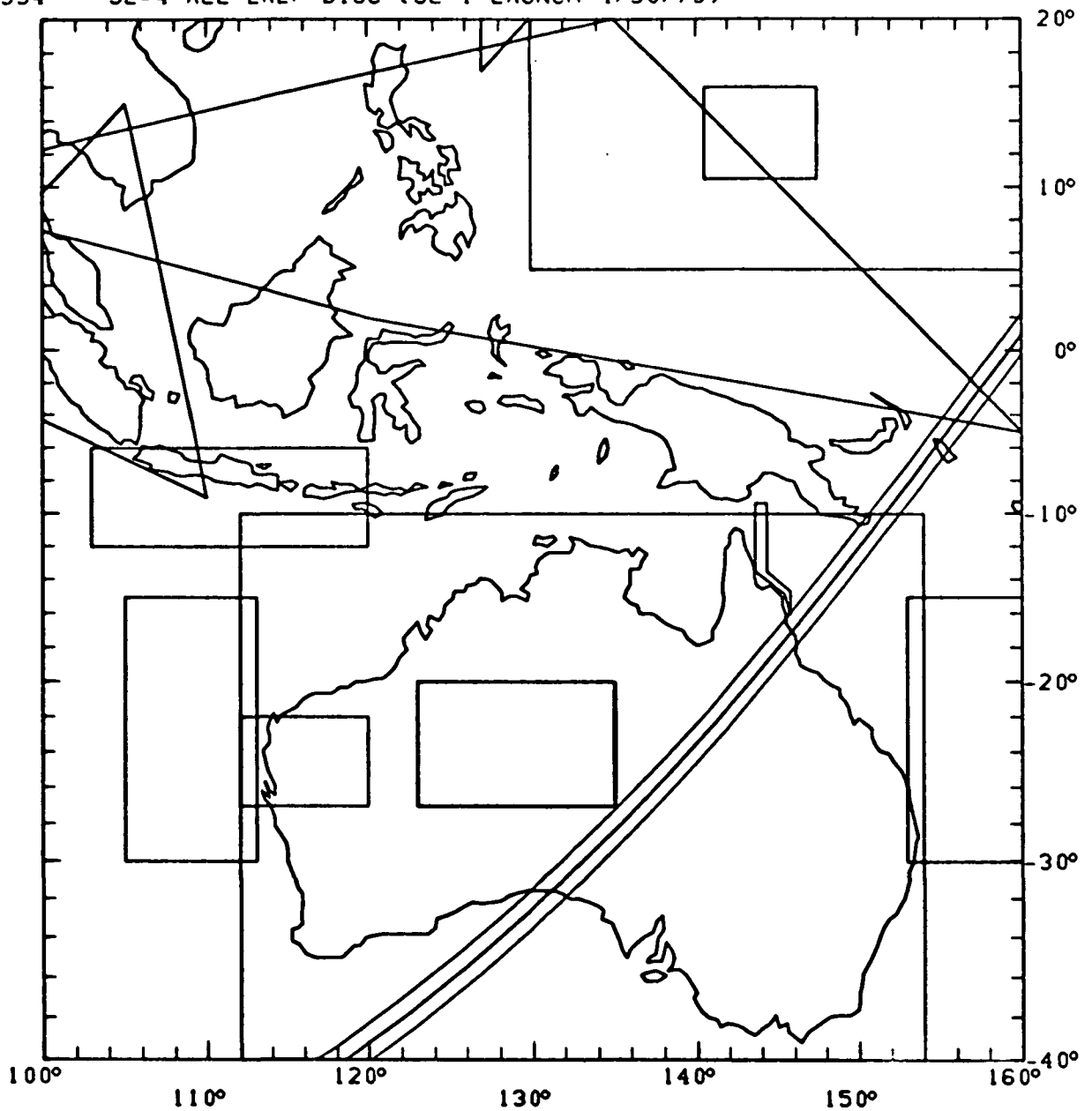
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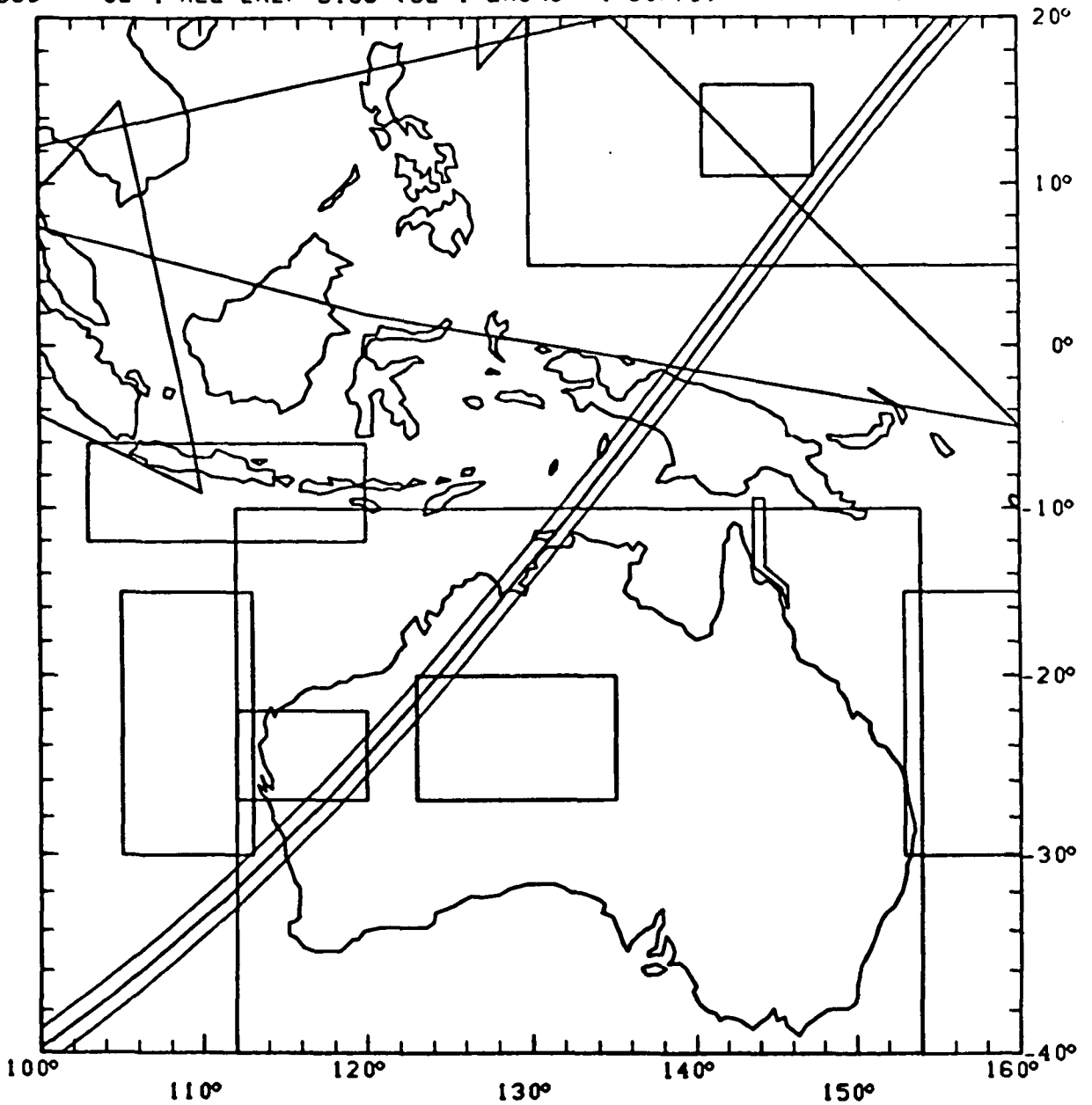
REV 3340 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



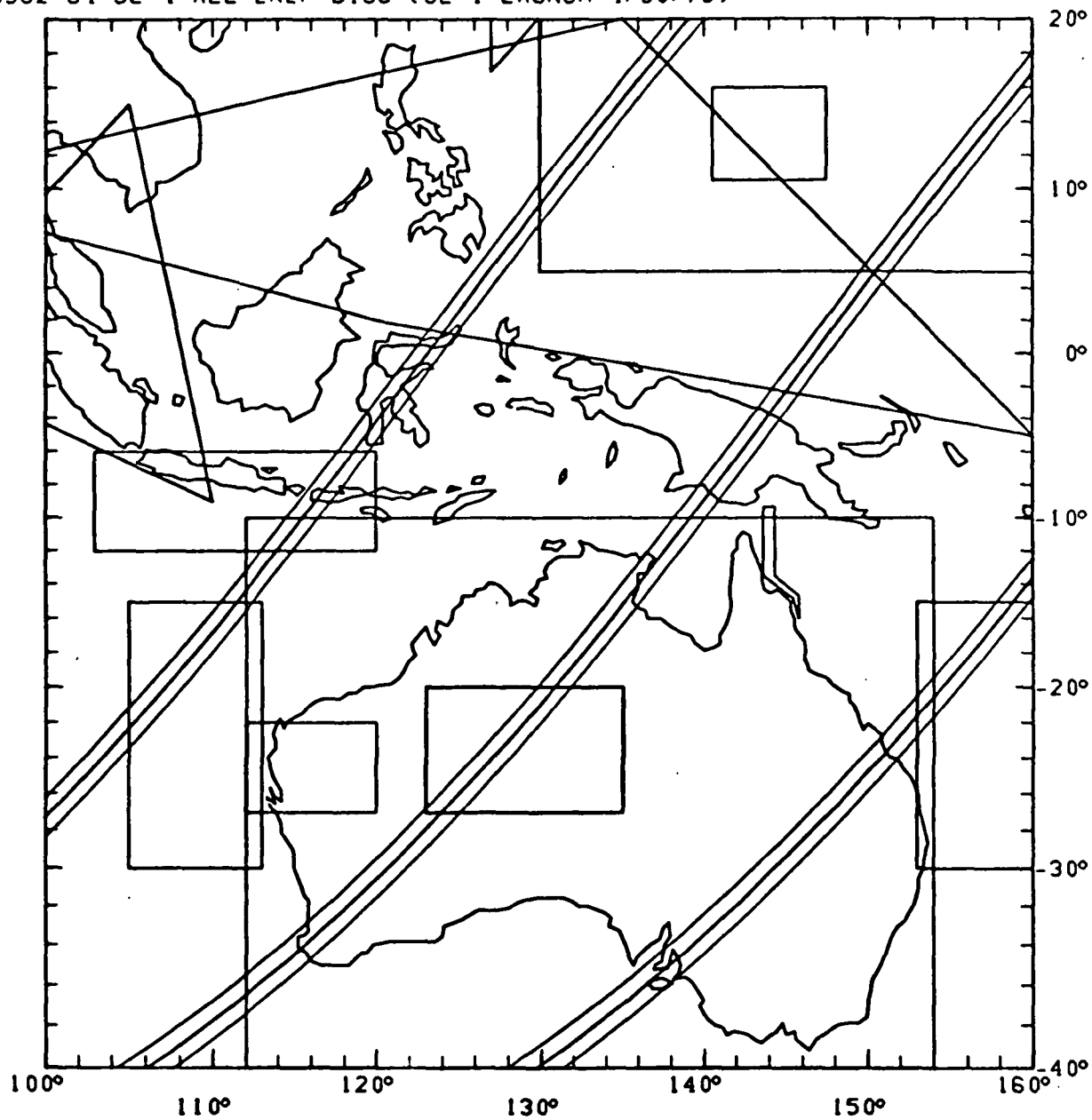
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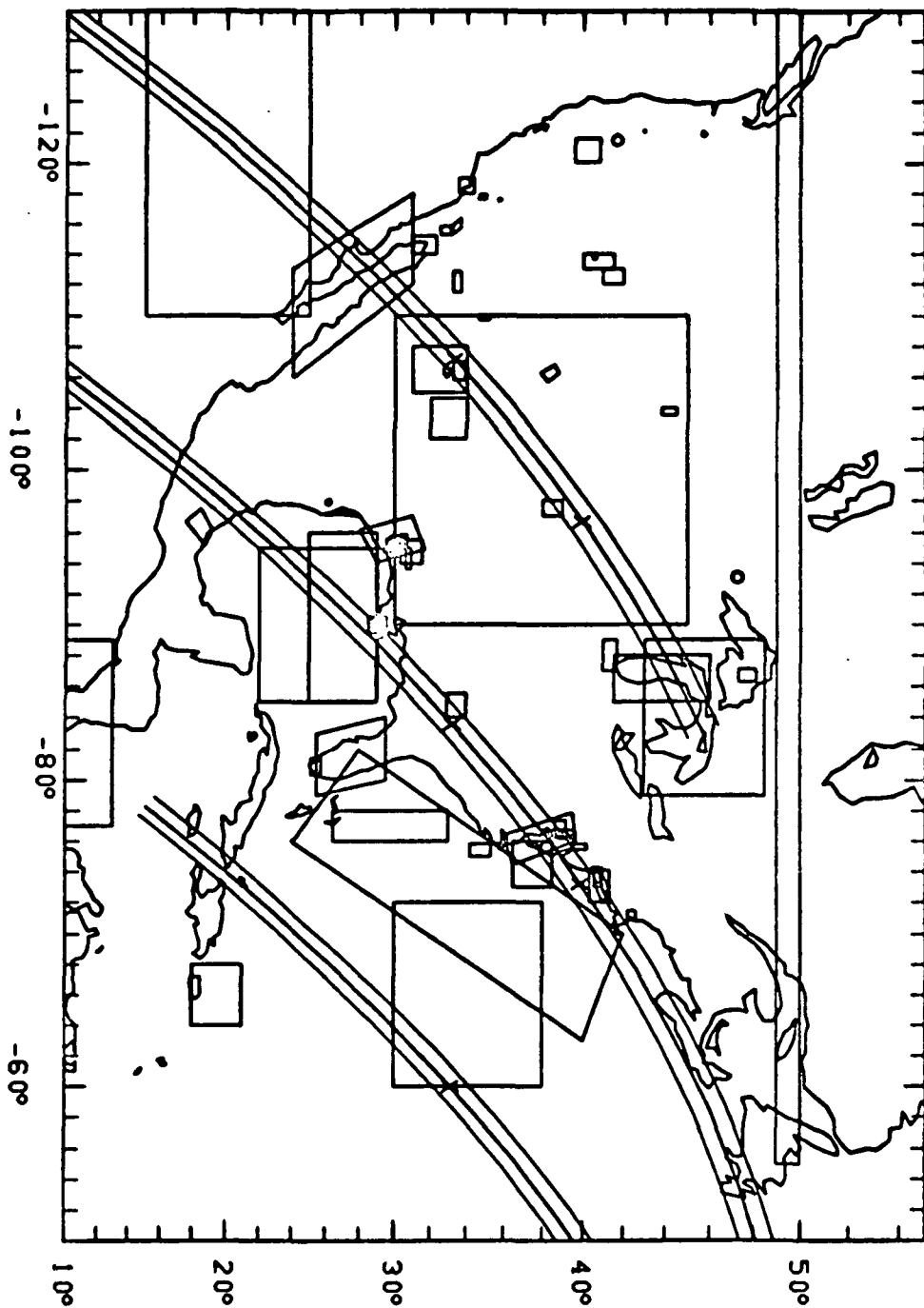
REV 3369 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



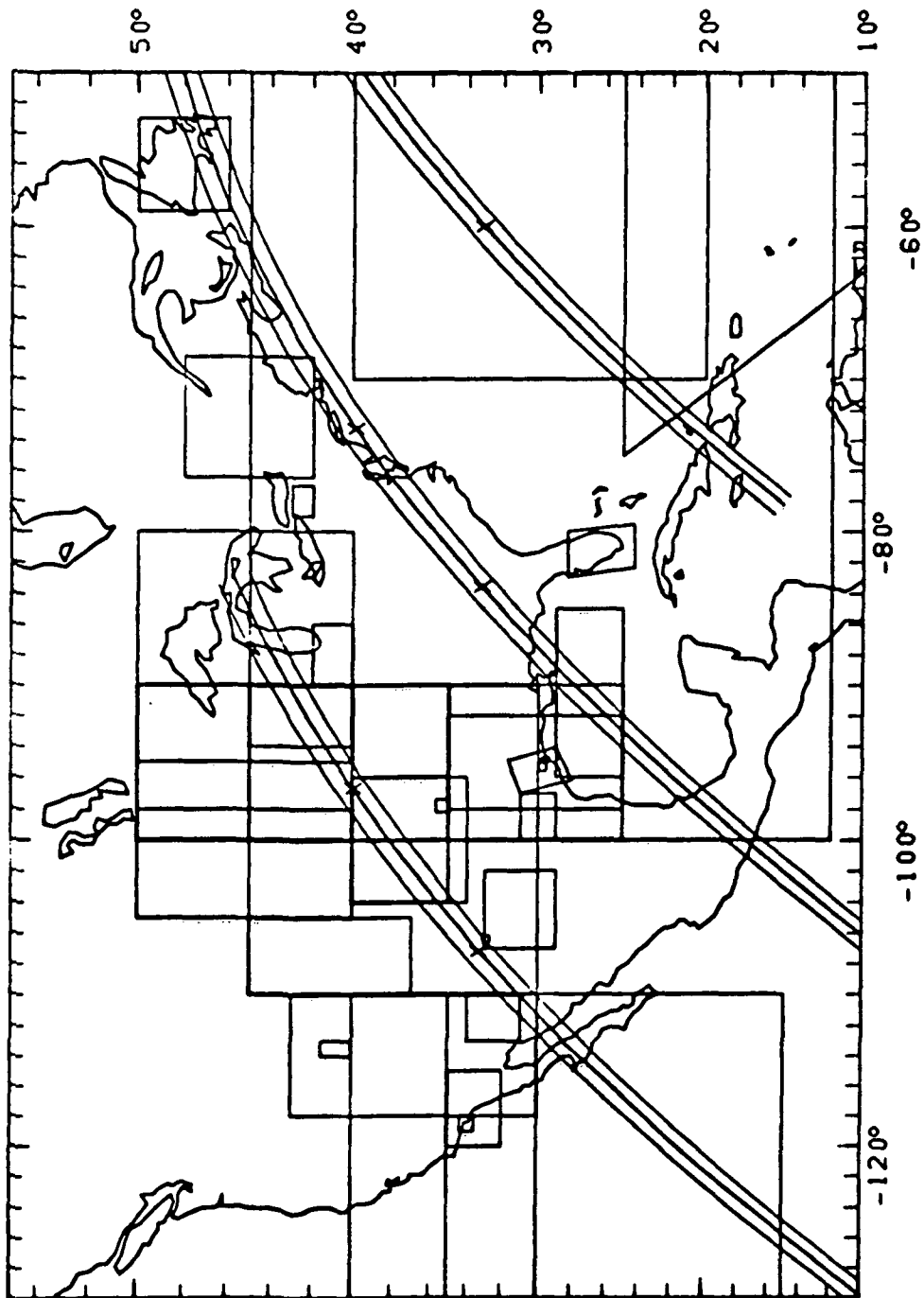
REV 3382-84 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



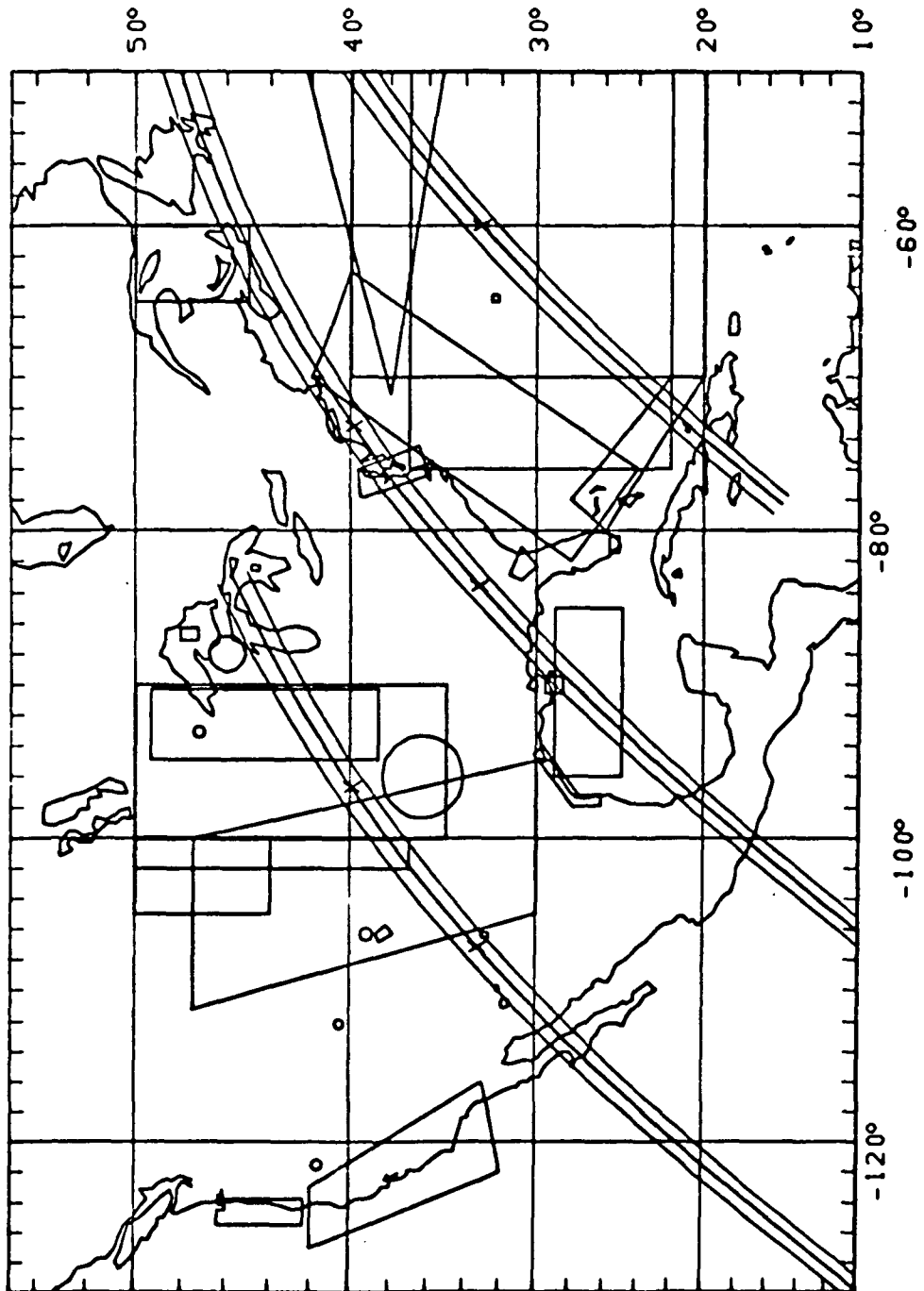
REV 3393-94 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



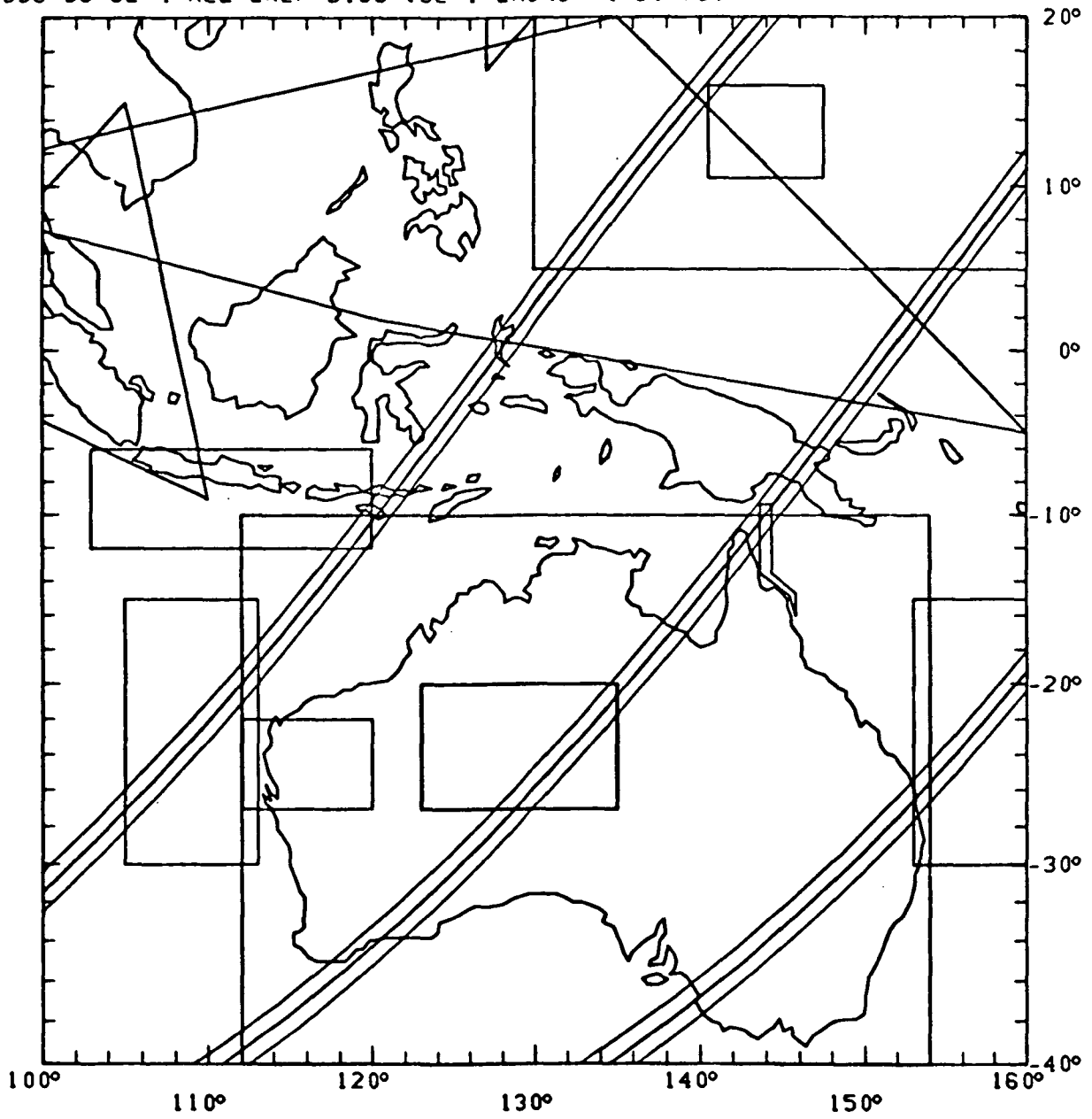
REV 3393-94 SL-4 EREP L.P.W (SL-1 LAUNCH 4/30/73)



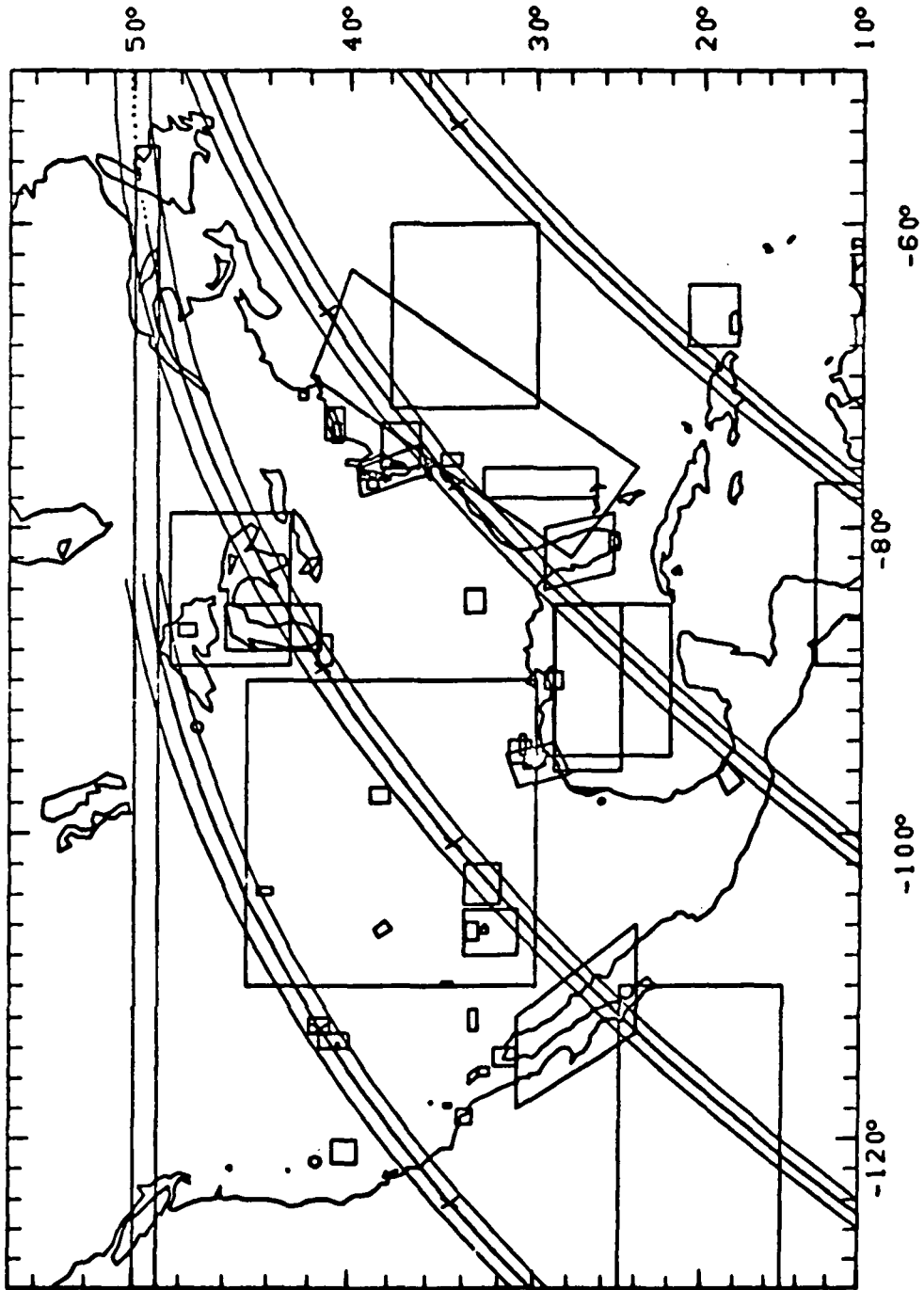
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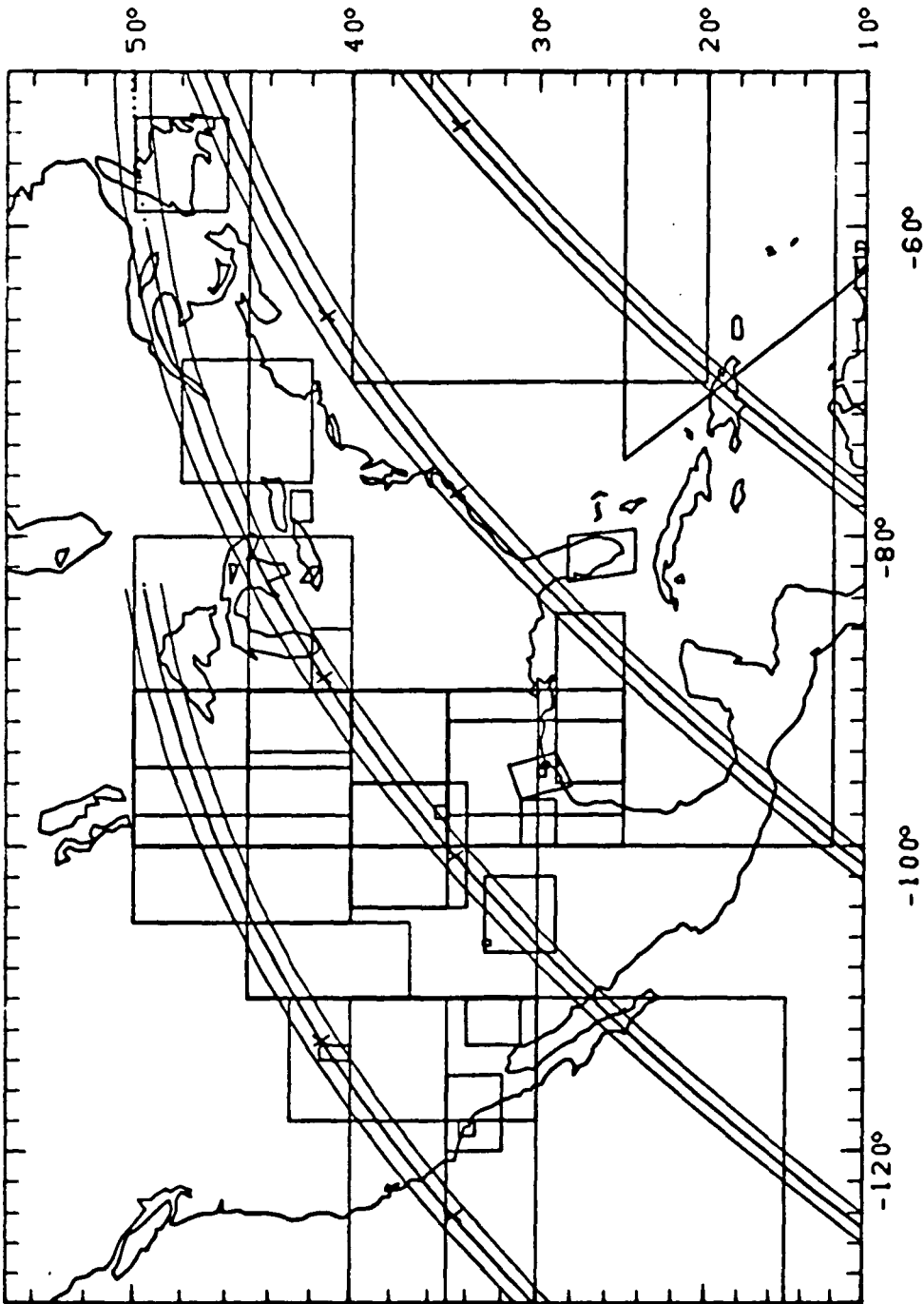
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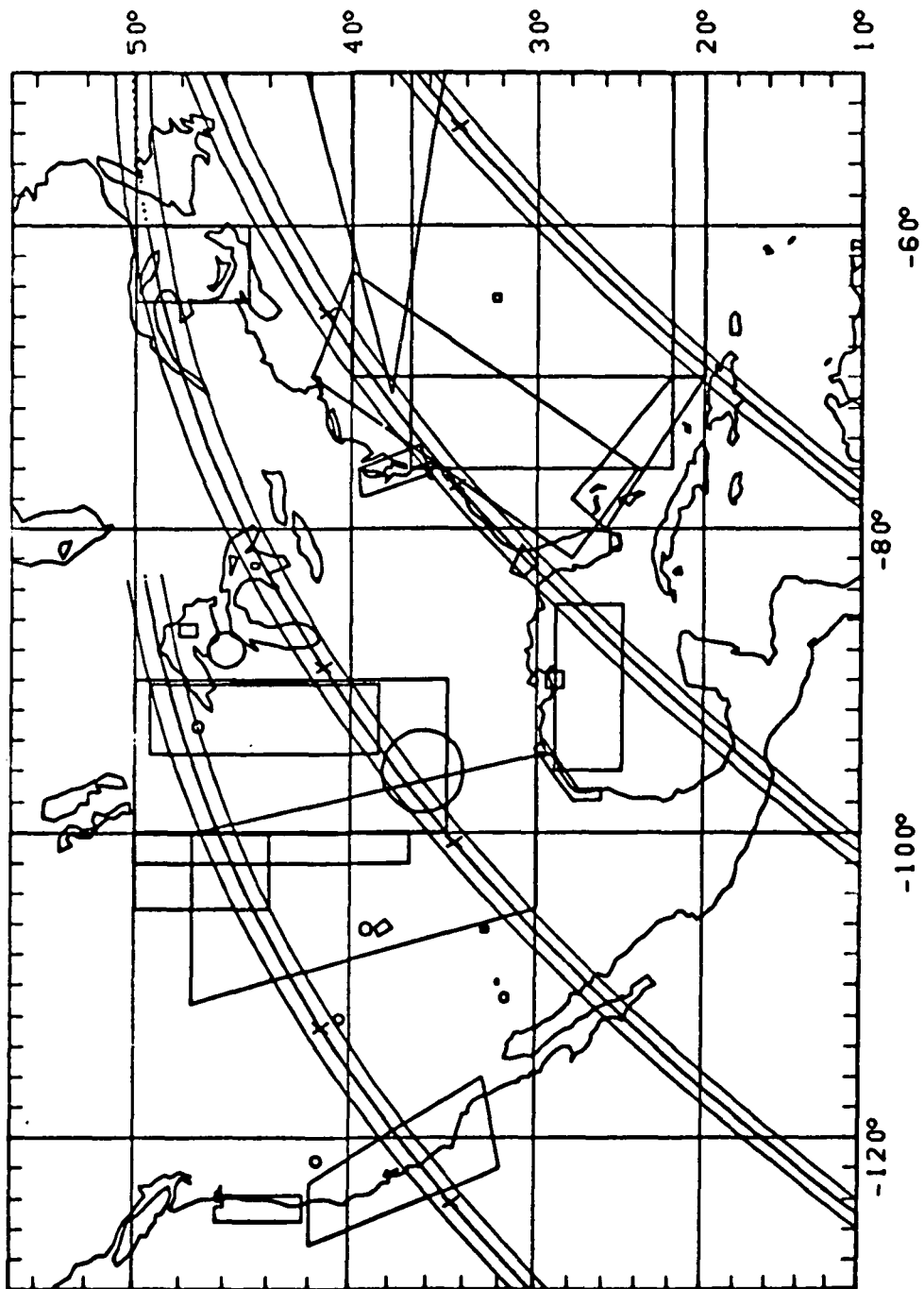
REV 3407-09 SL-4 EREP E,F (SL-1 LAUNCH 4/30/73)



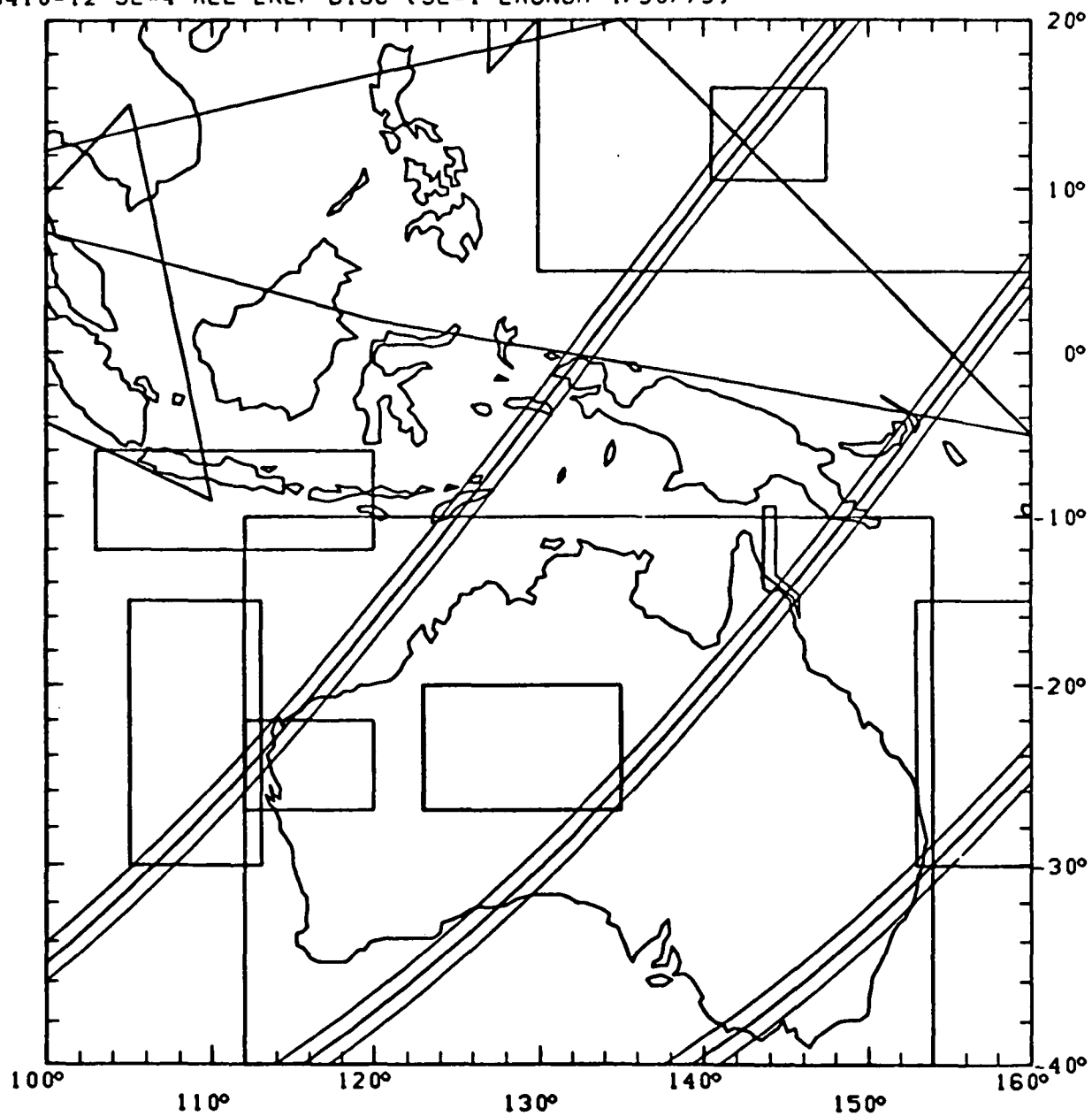
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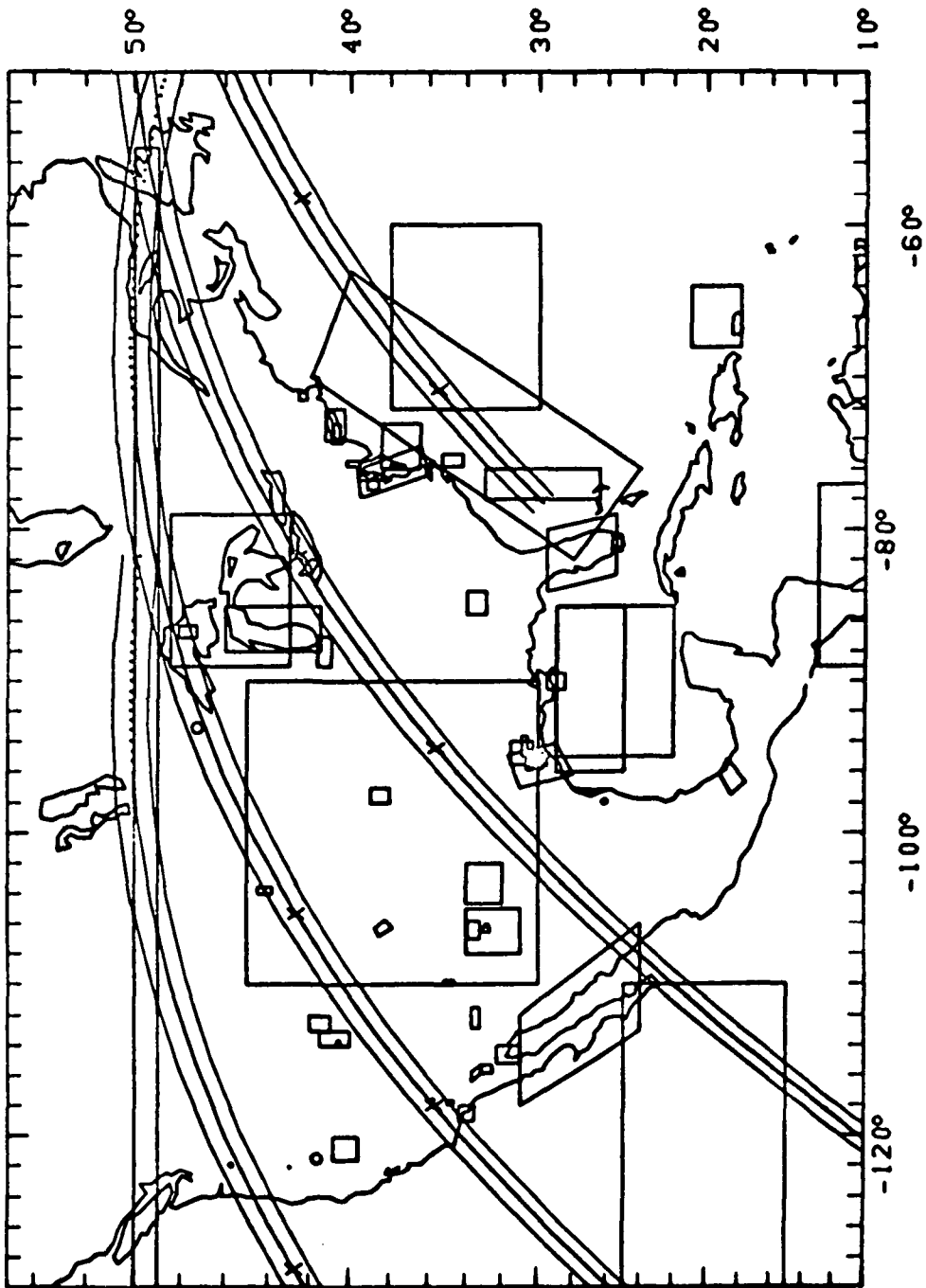
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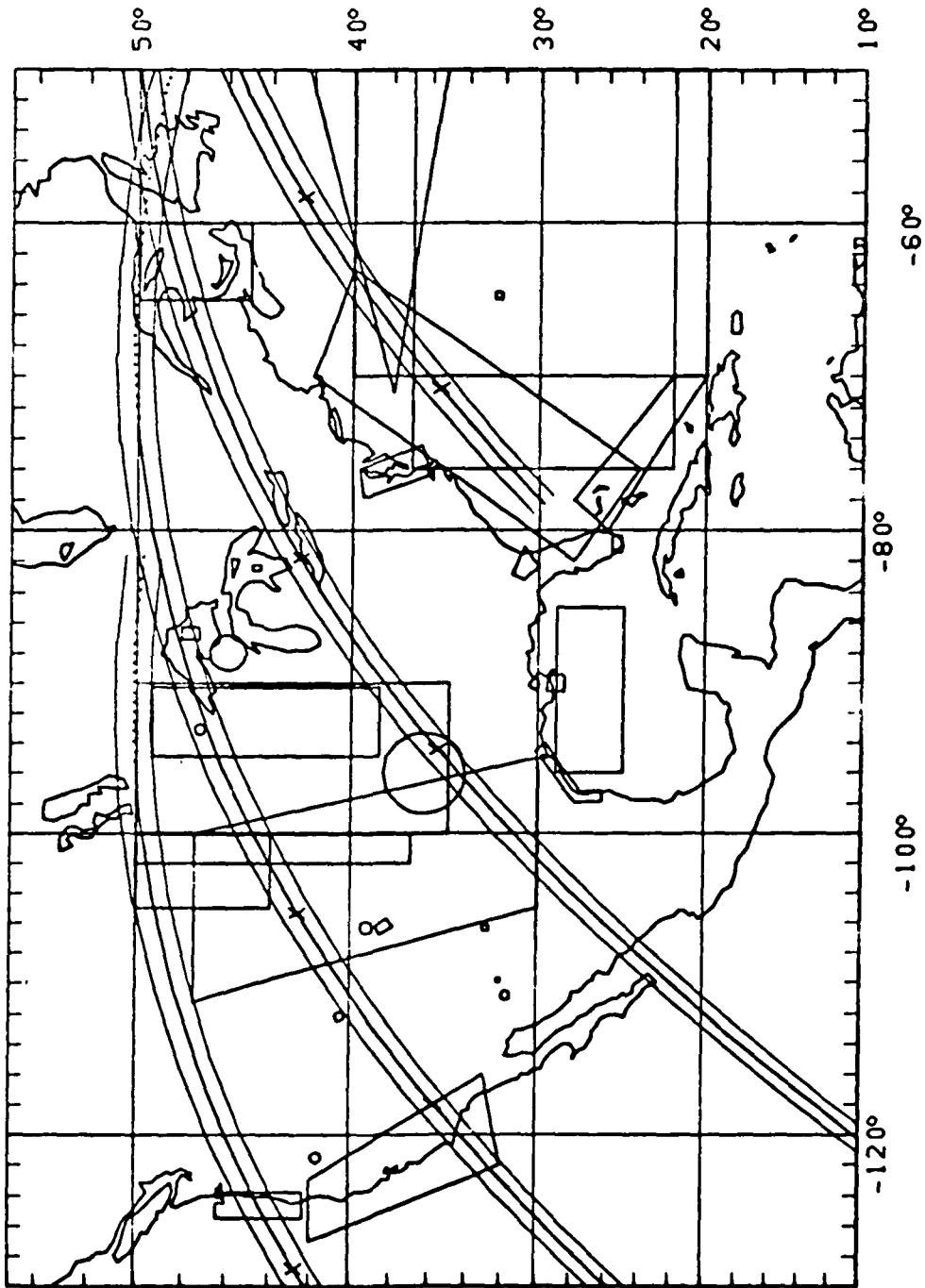
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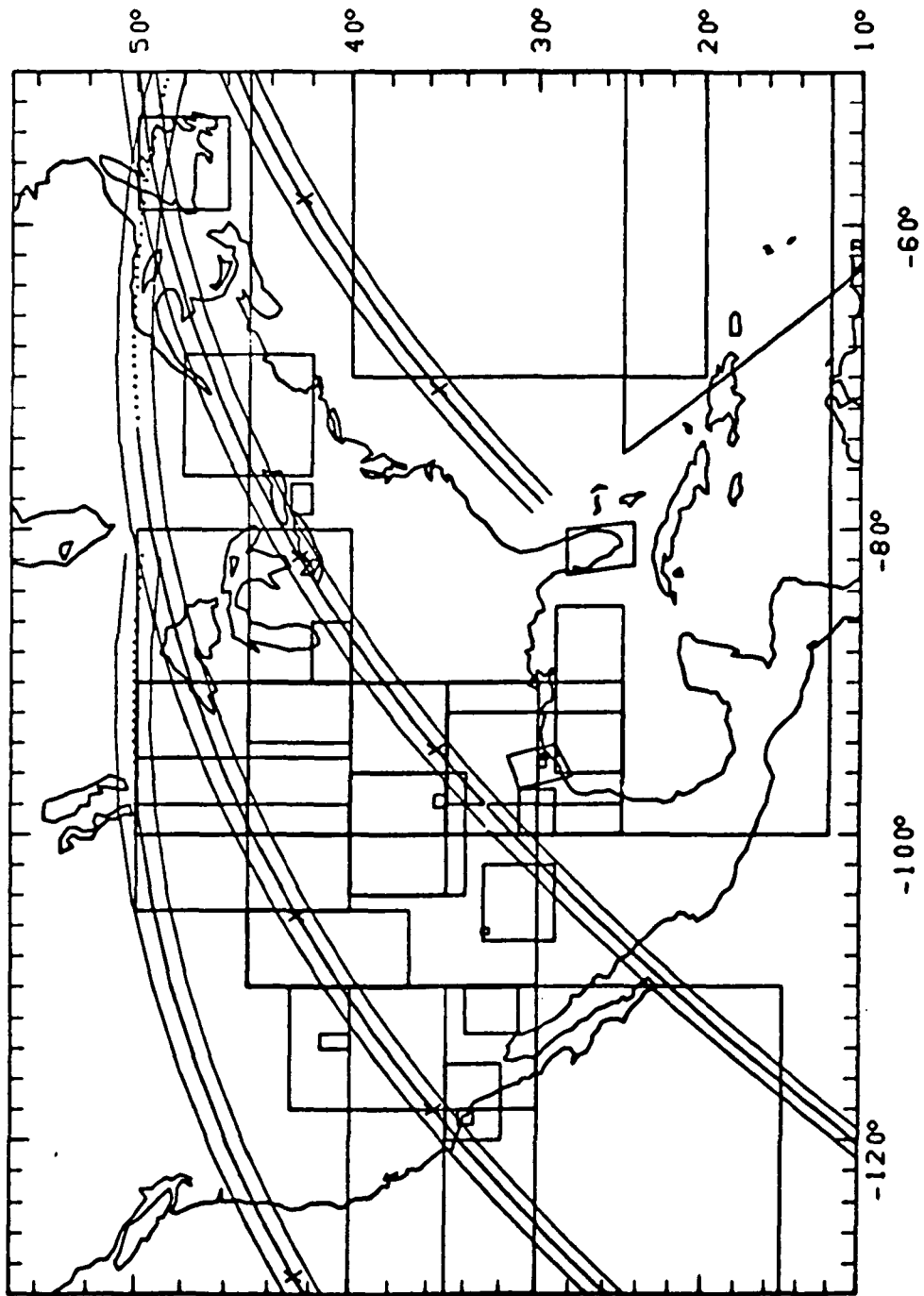
REV 3422-24 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



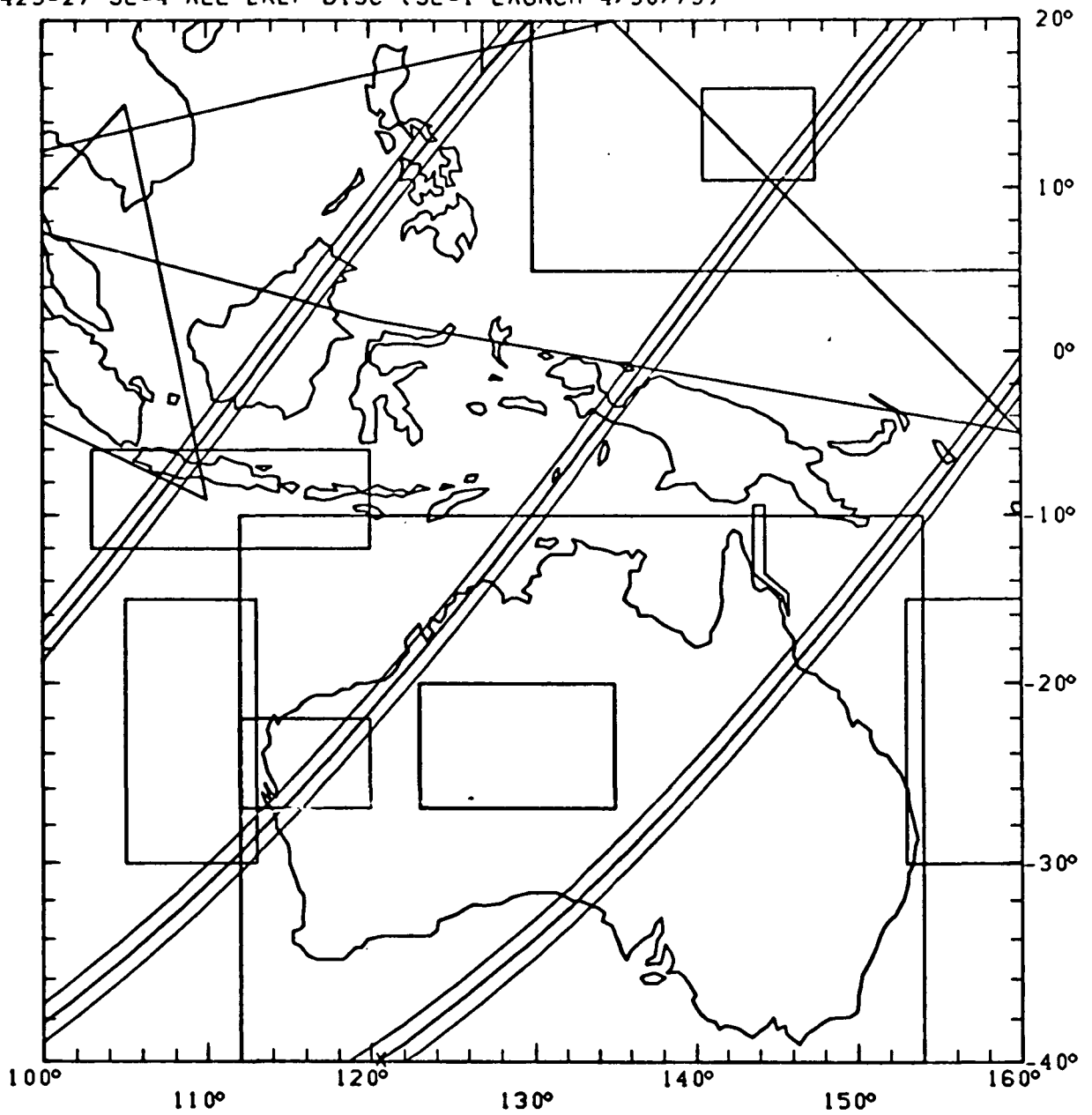
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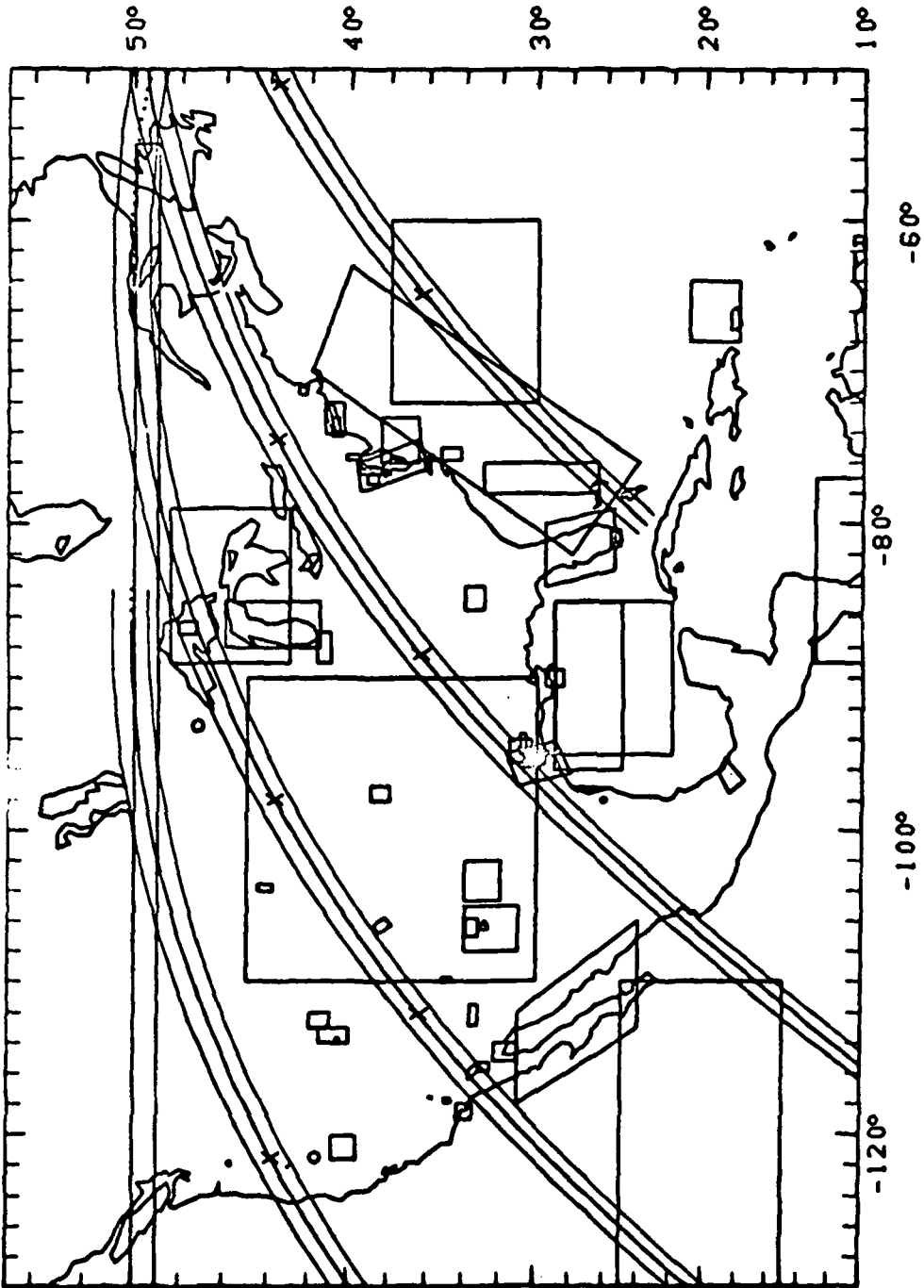
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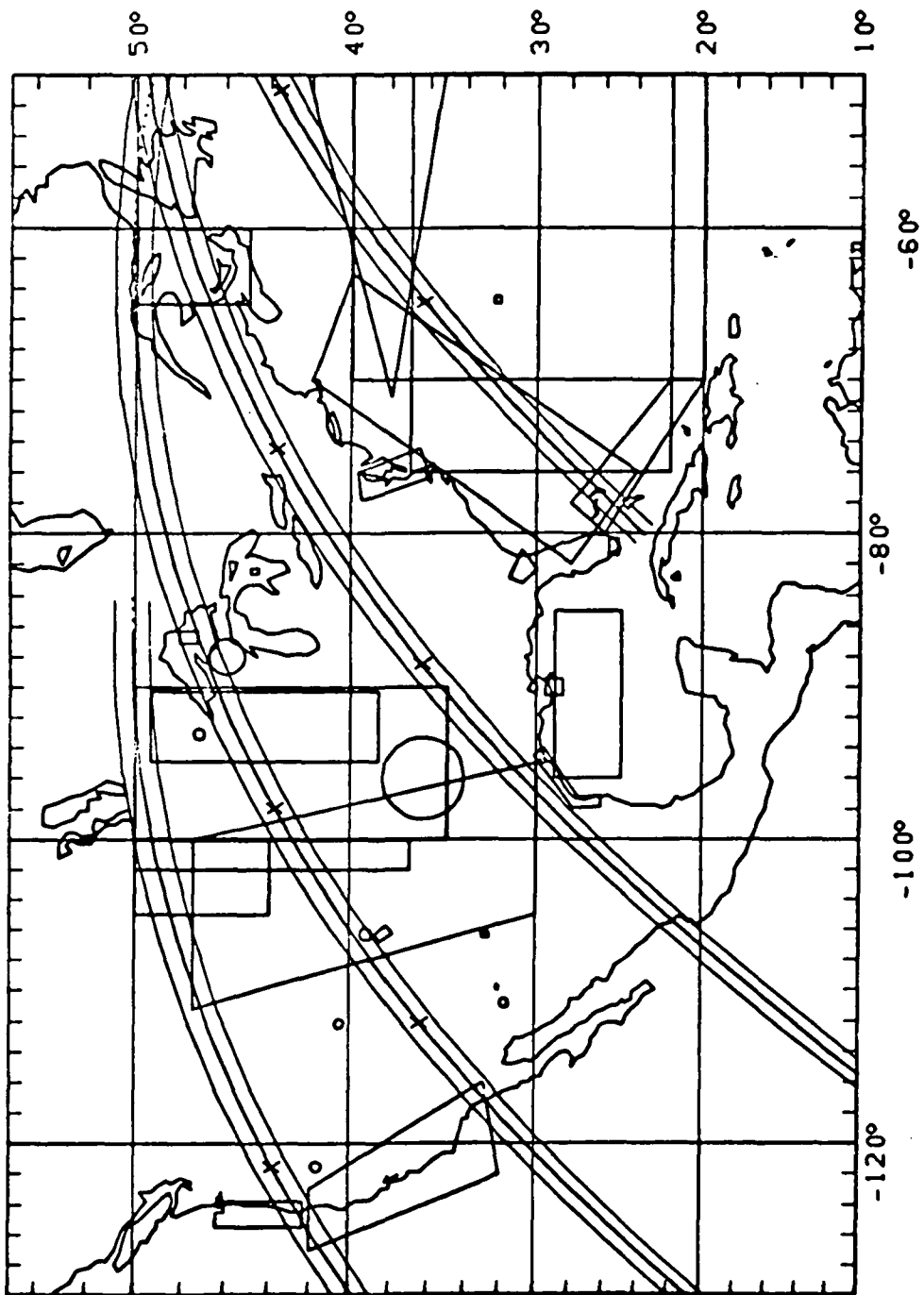
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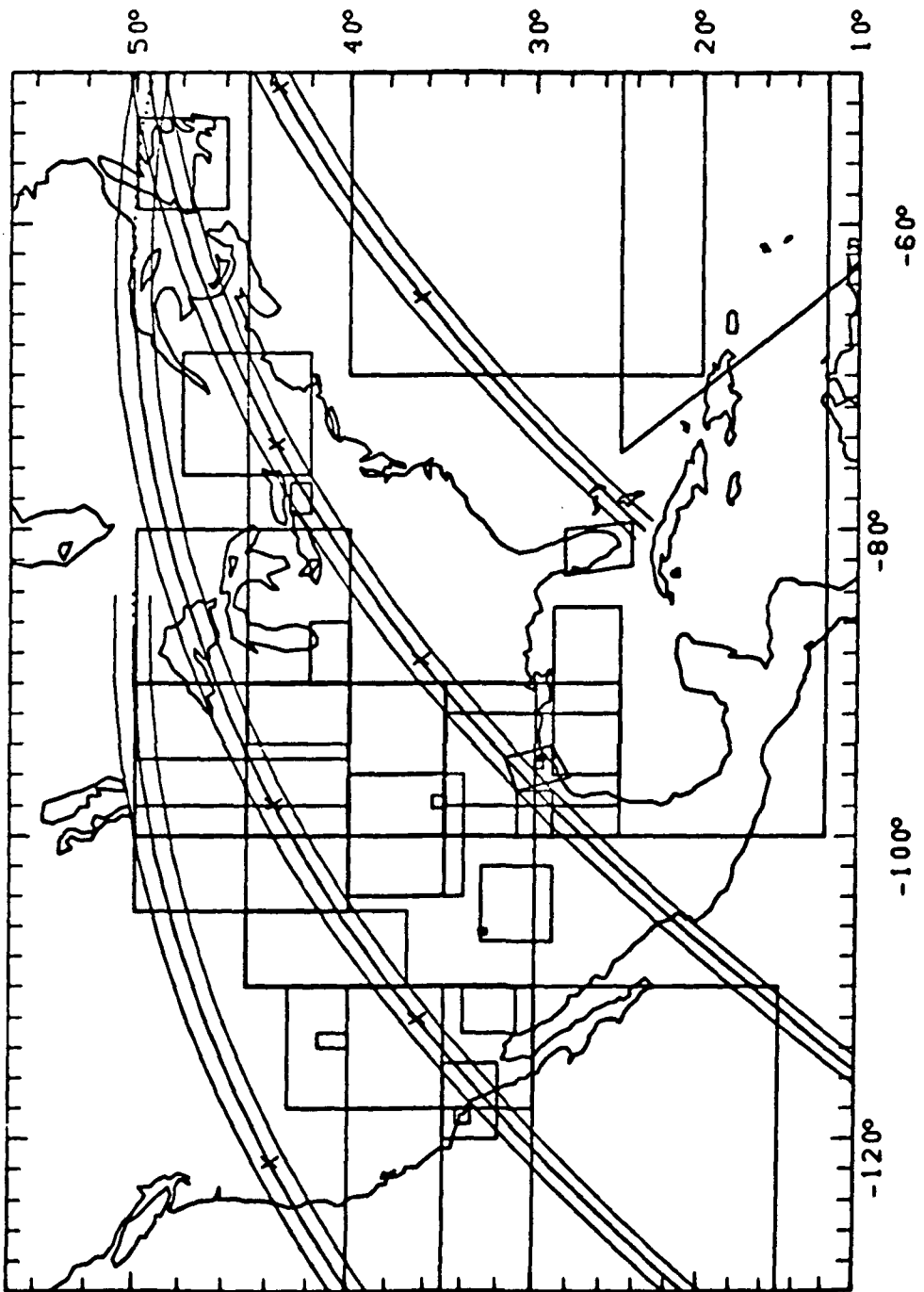
REV 3436-38 SL-4 EREP E.F (SL-1 LAUNCH 4/30/73)



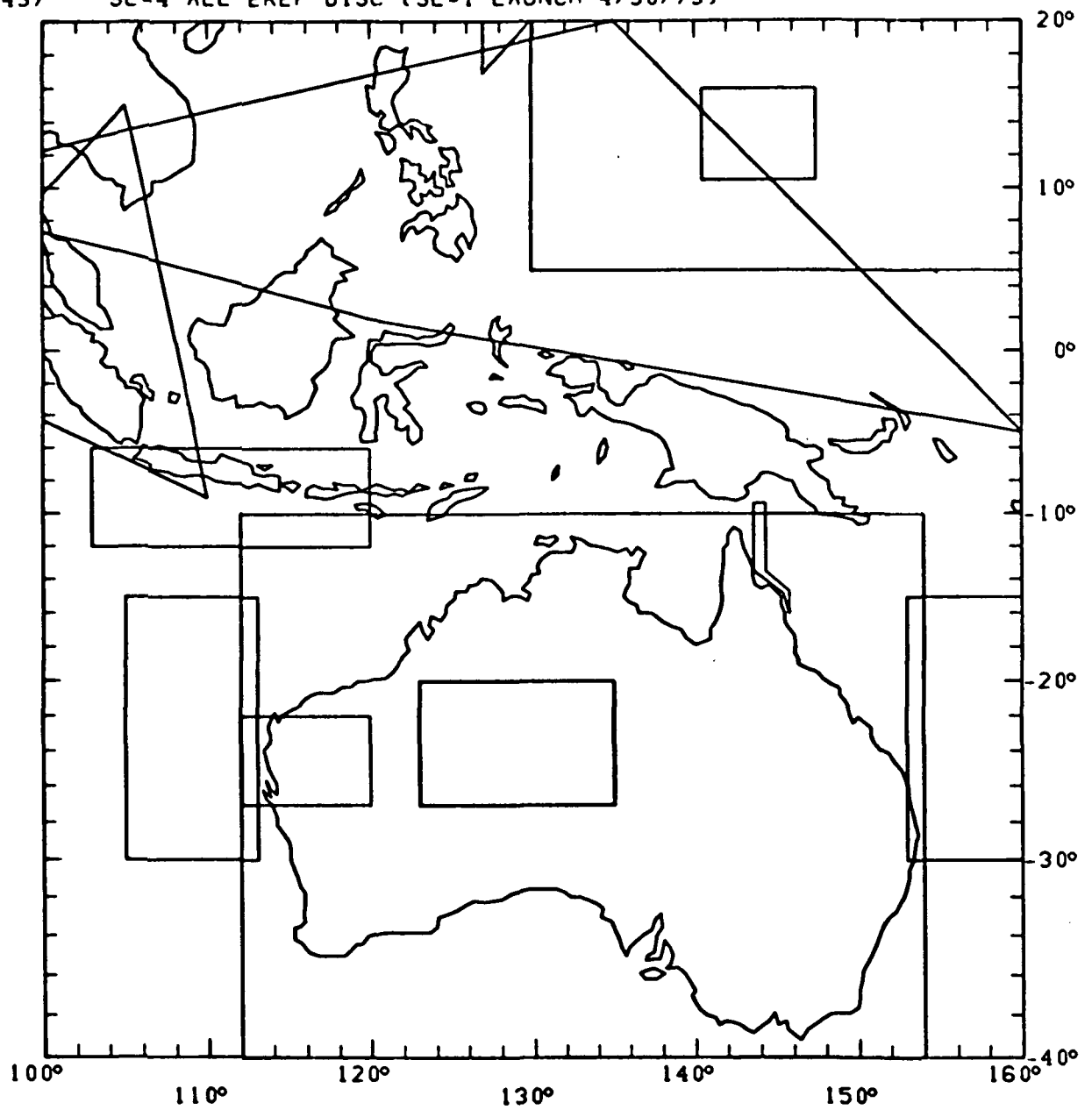
REV 3436-38 SL-4 EREP H.G.O (SL-1 LAUNCH 4/30/73)



REV 3436-38 SL-4 EREP L.P.W (SL-1 LAUNCH 4/30/73)

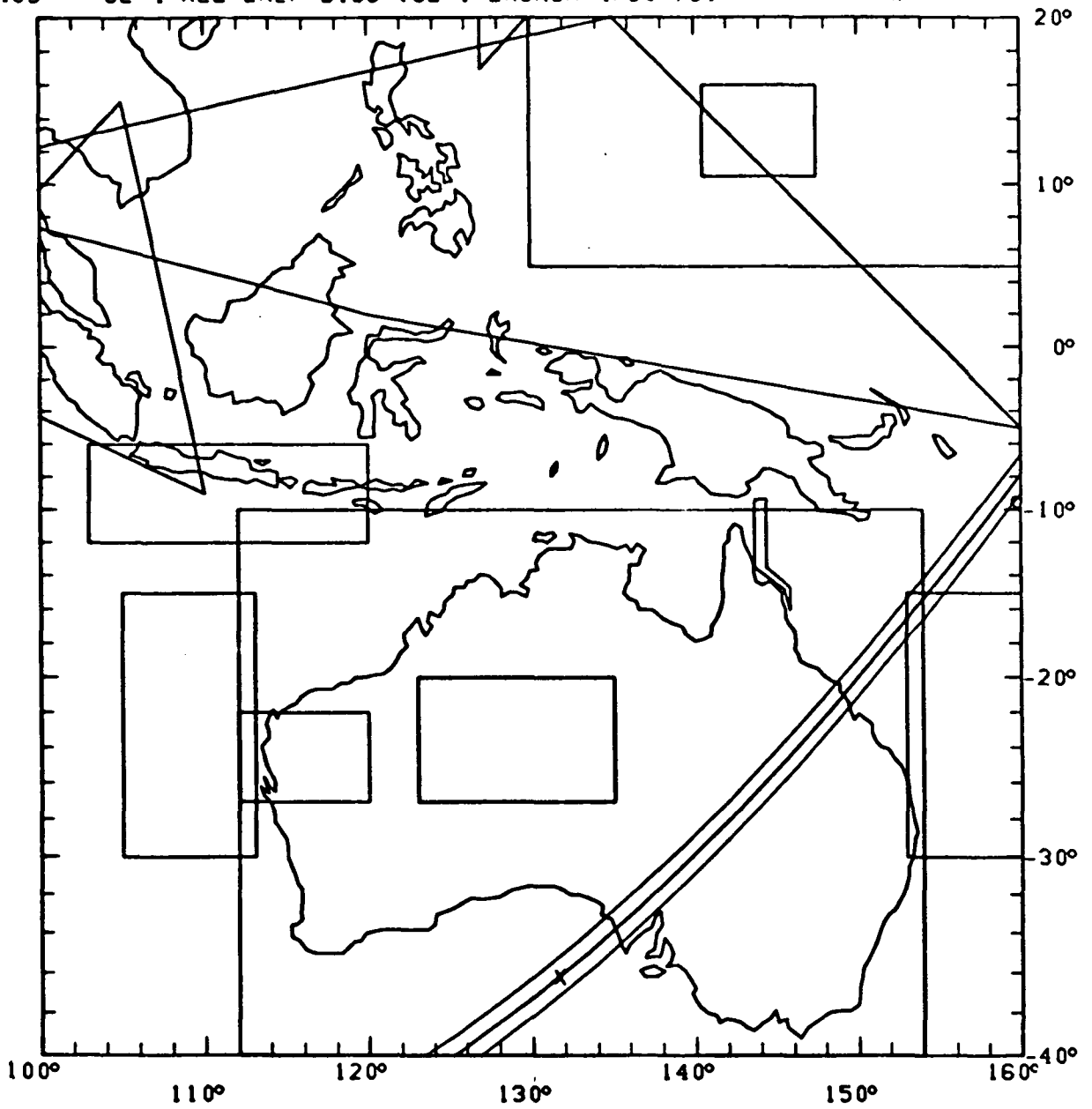


REV 3437 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)

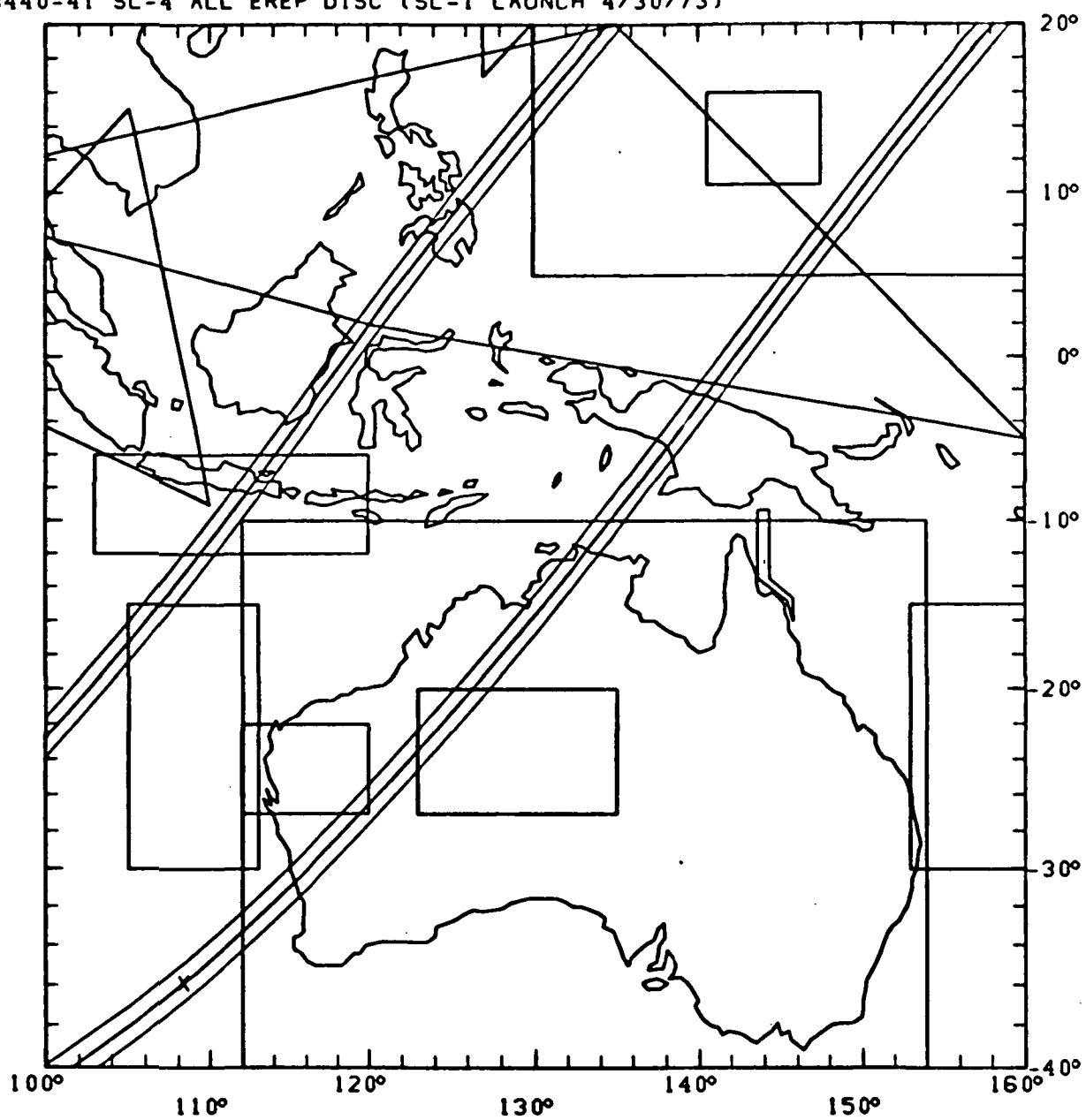


REV 3439

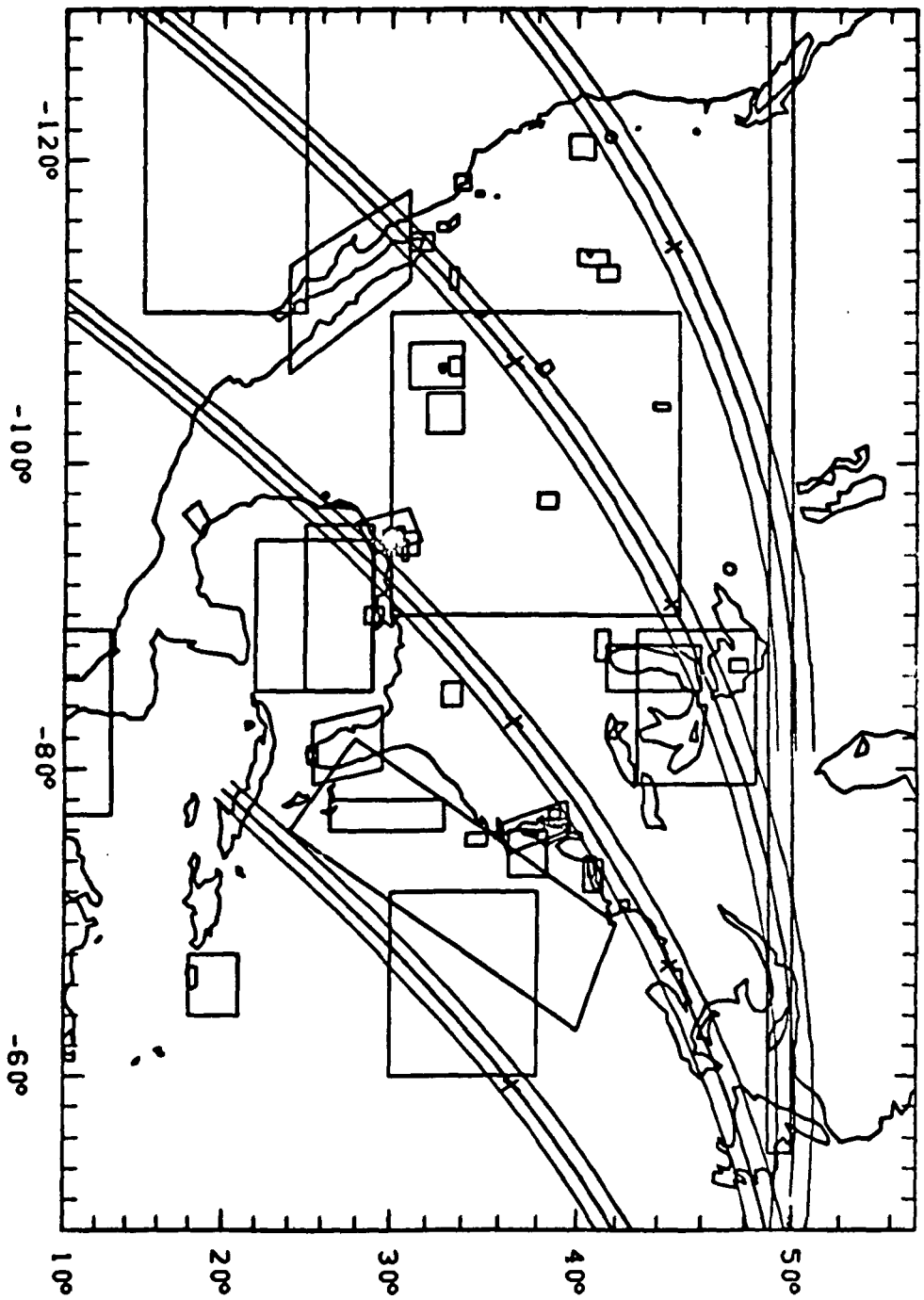
SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)

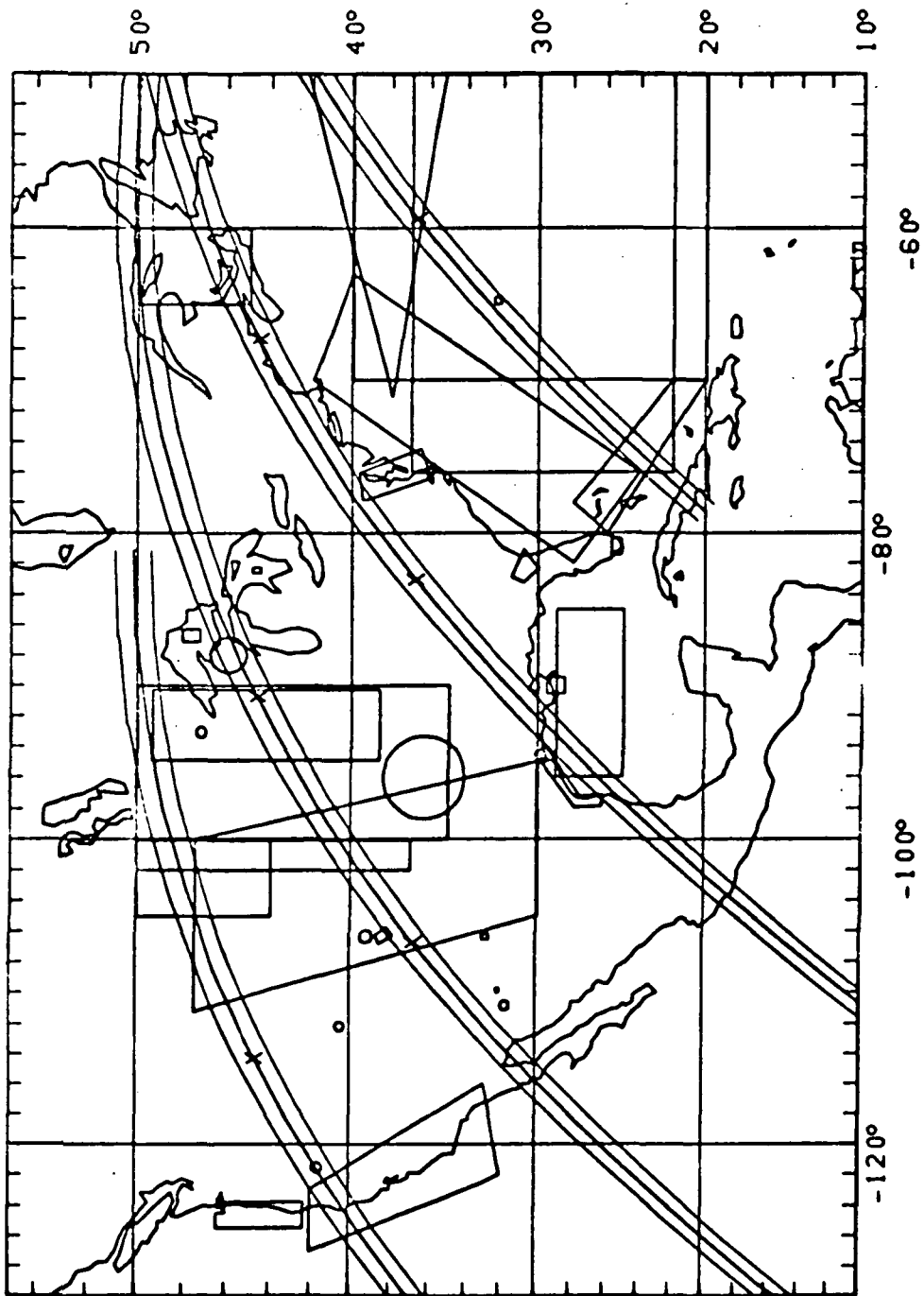


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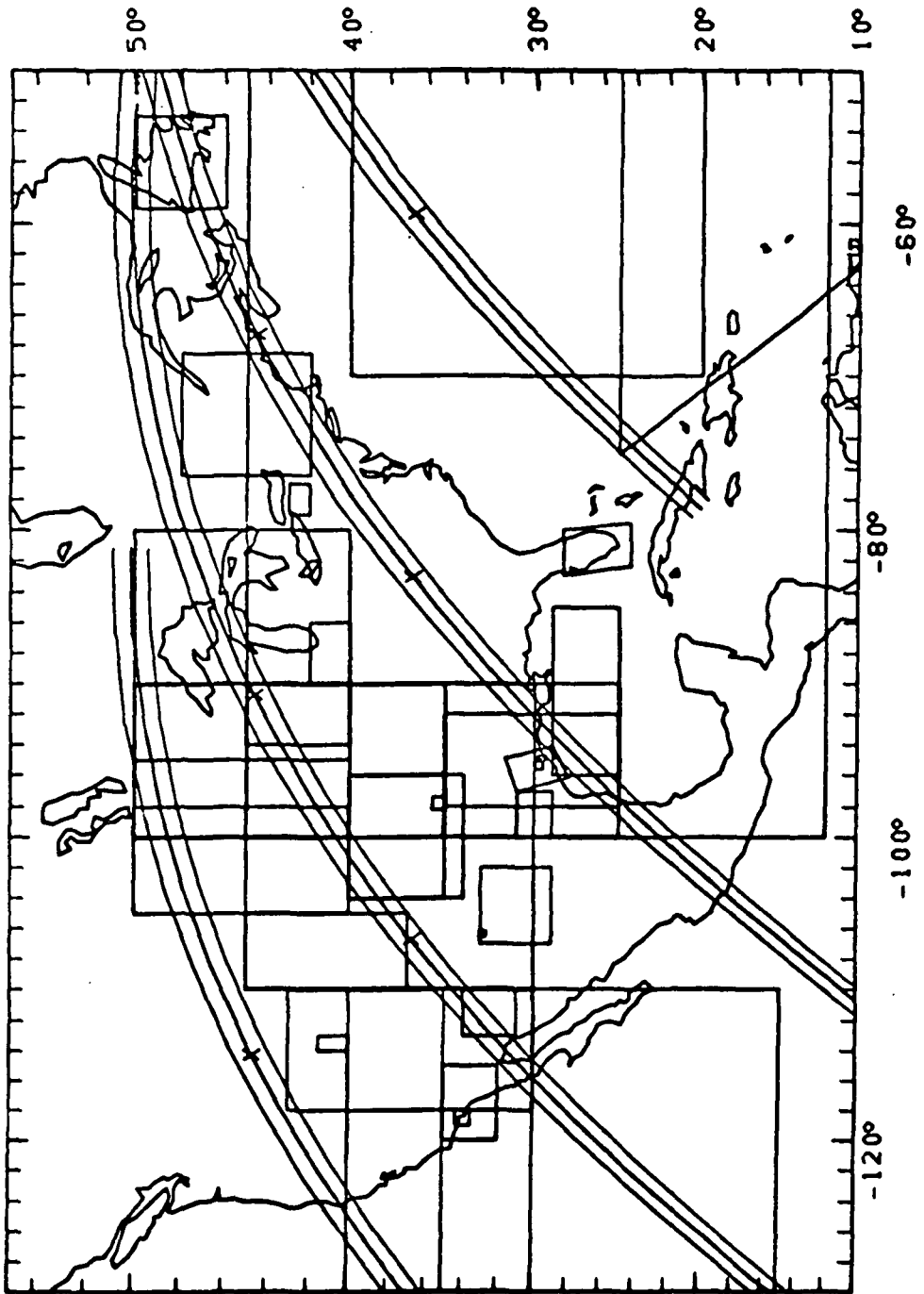


REV 3450-52 SL-4 EREP E,F (SL-1 LAUNCH 4/30/73)

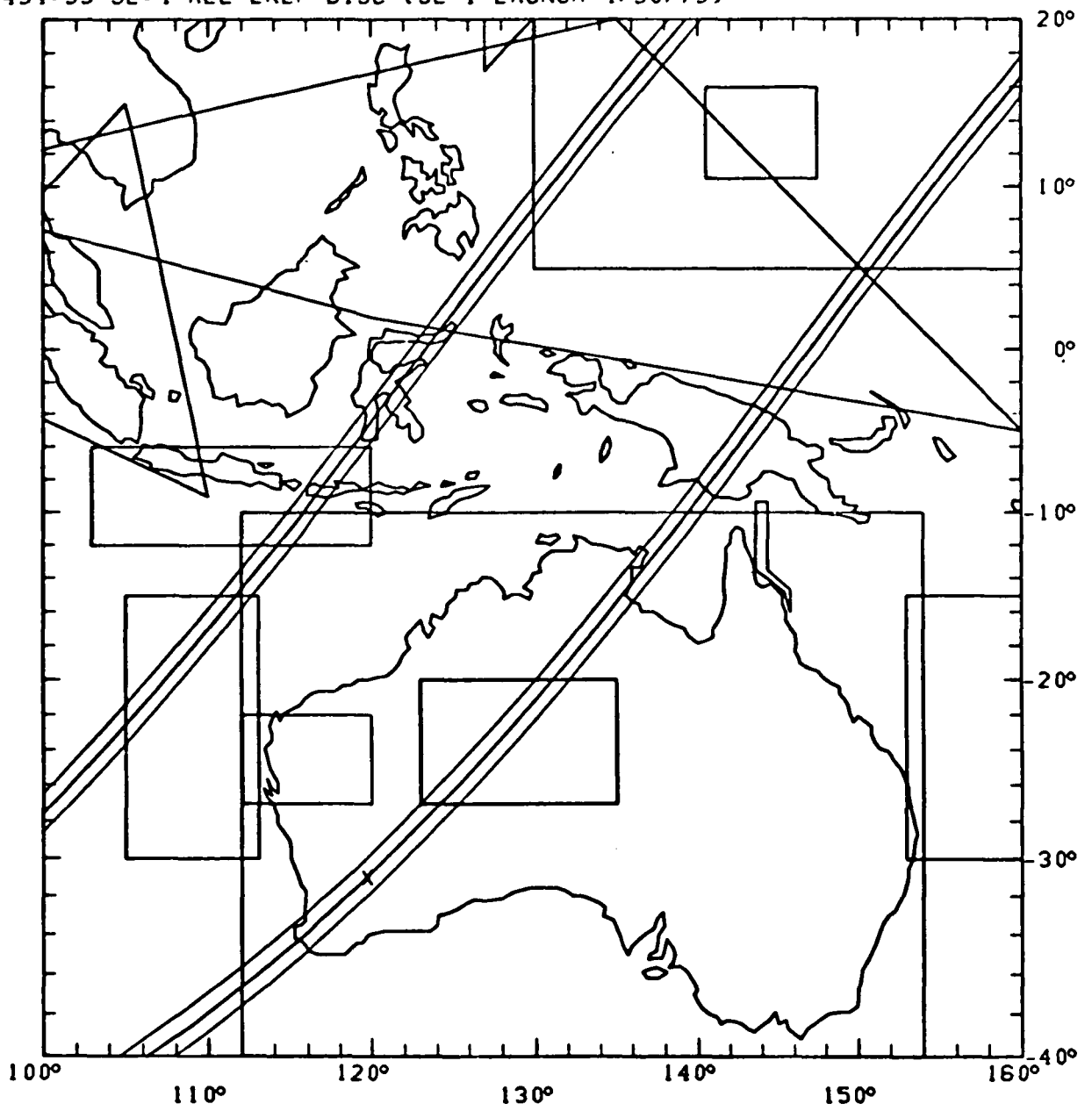




REV 3450-52 SL-4 EREP L.P.W (SL-1 LAUNCH 4/30/73)

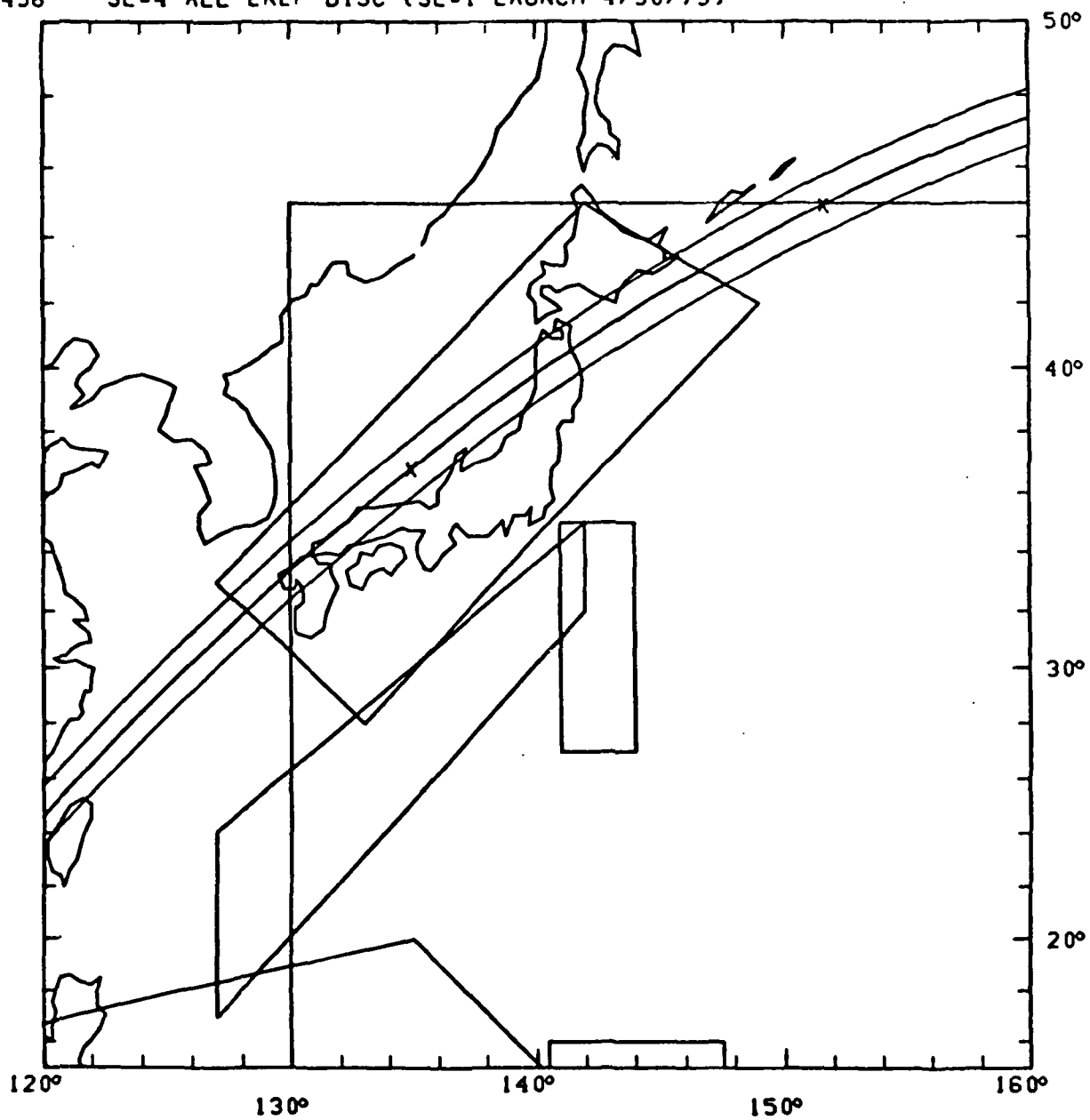


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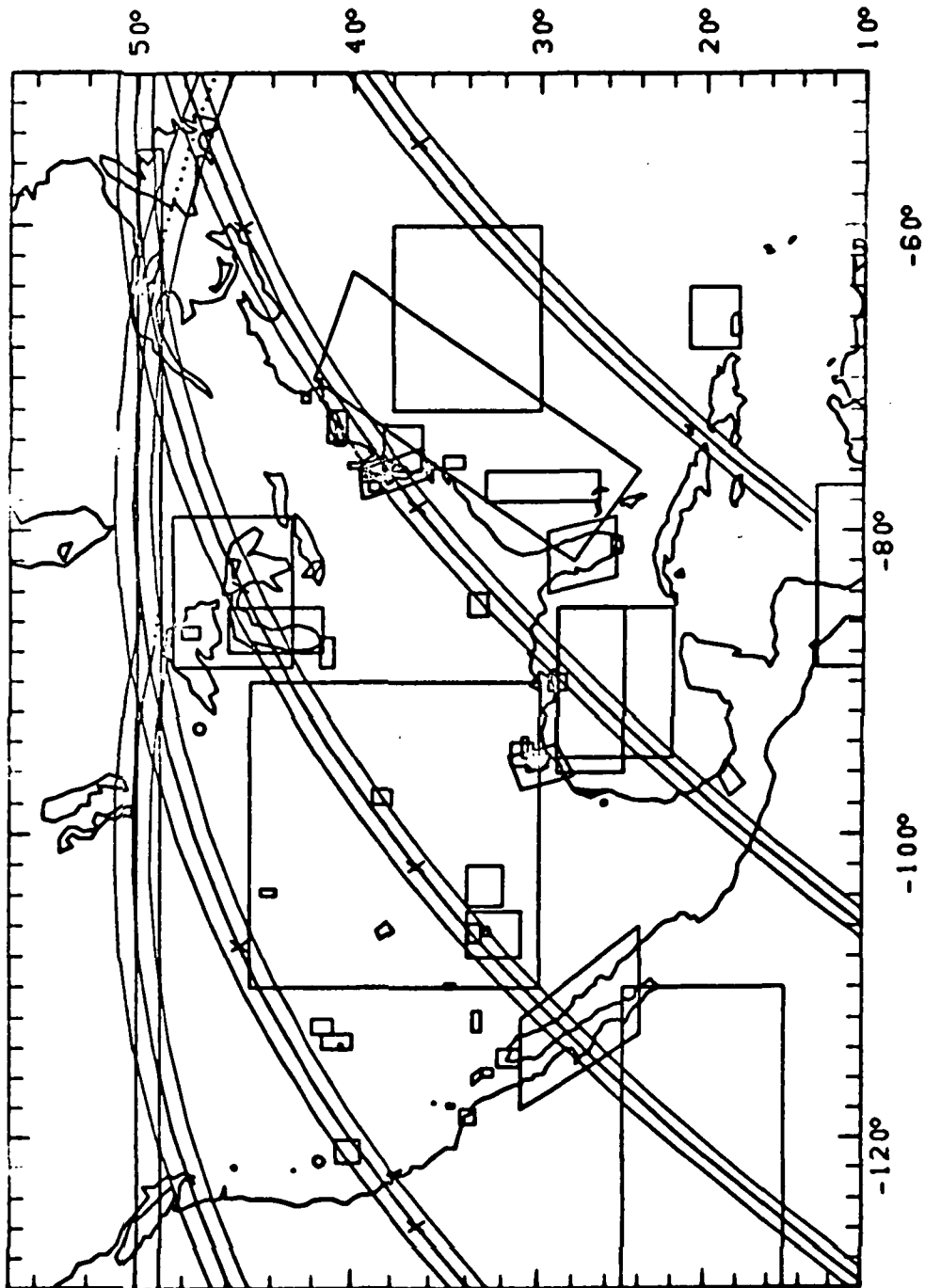


REV 3456

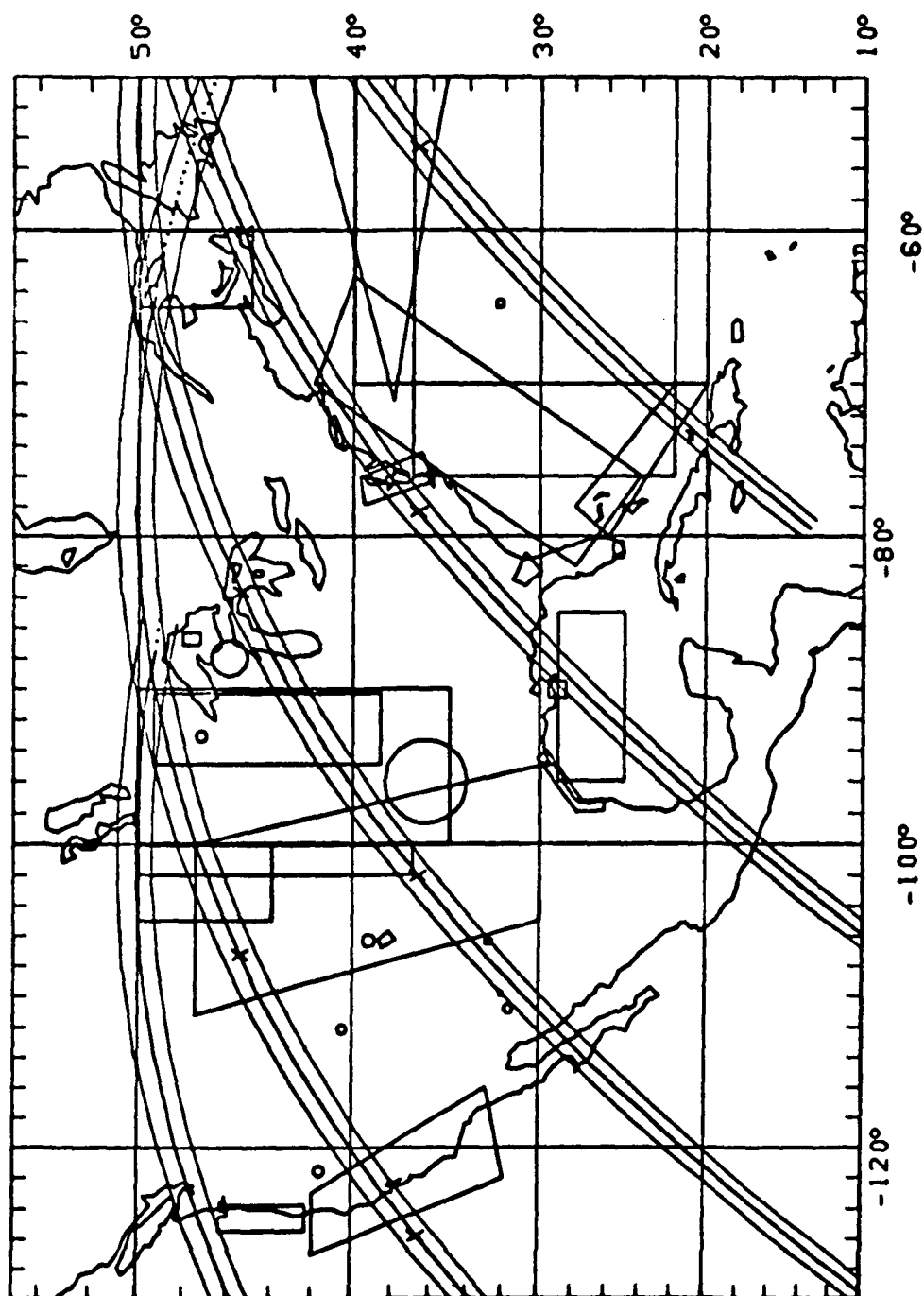
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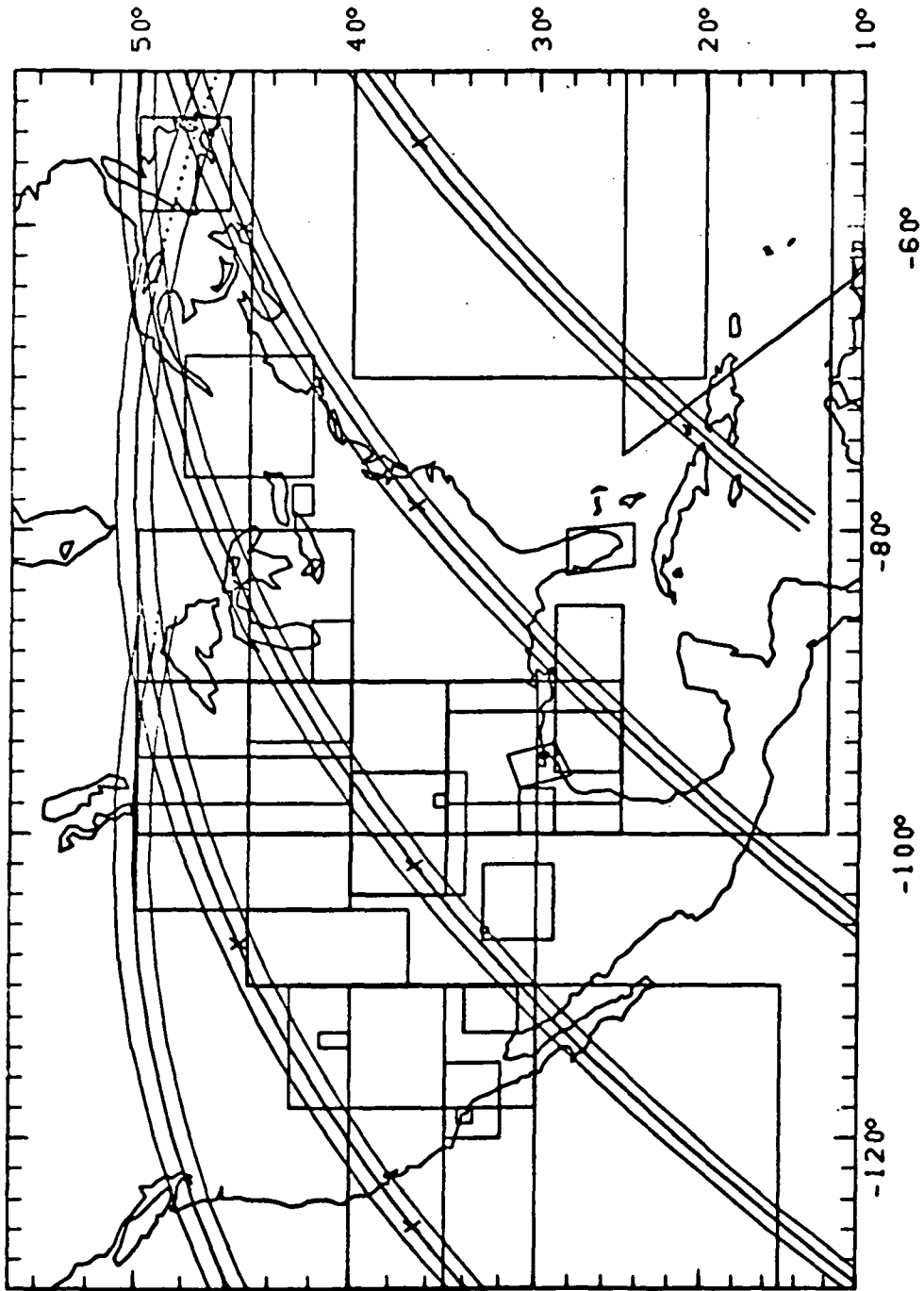
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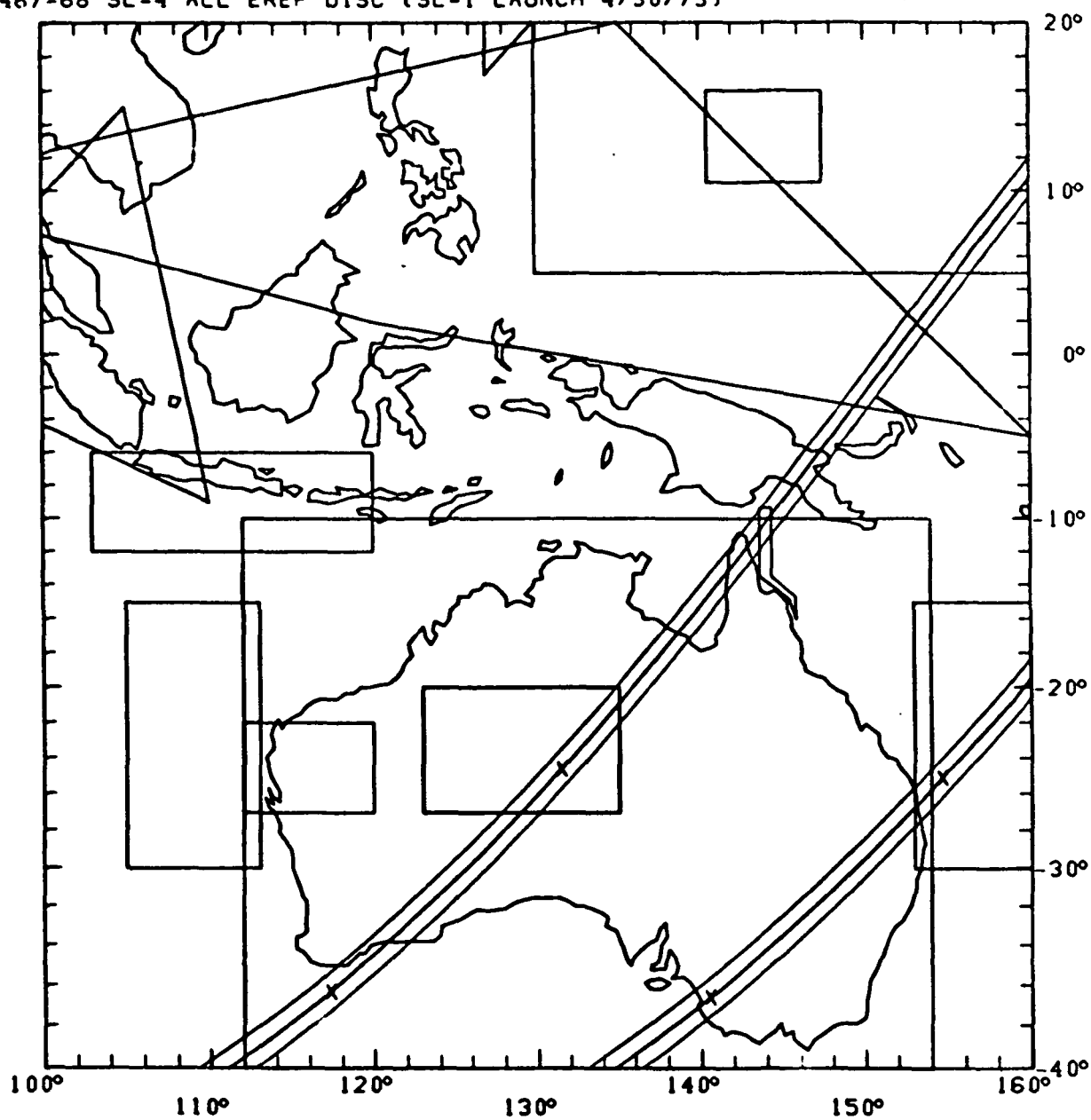
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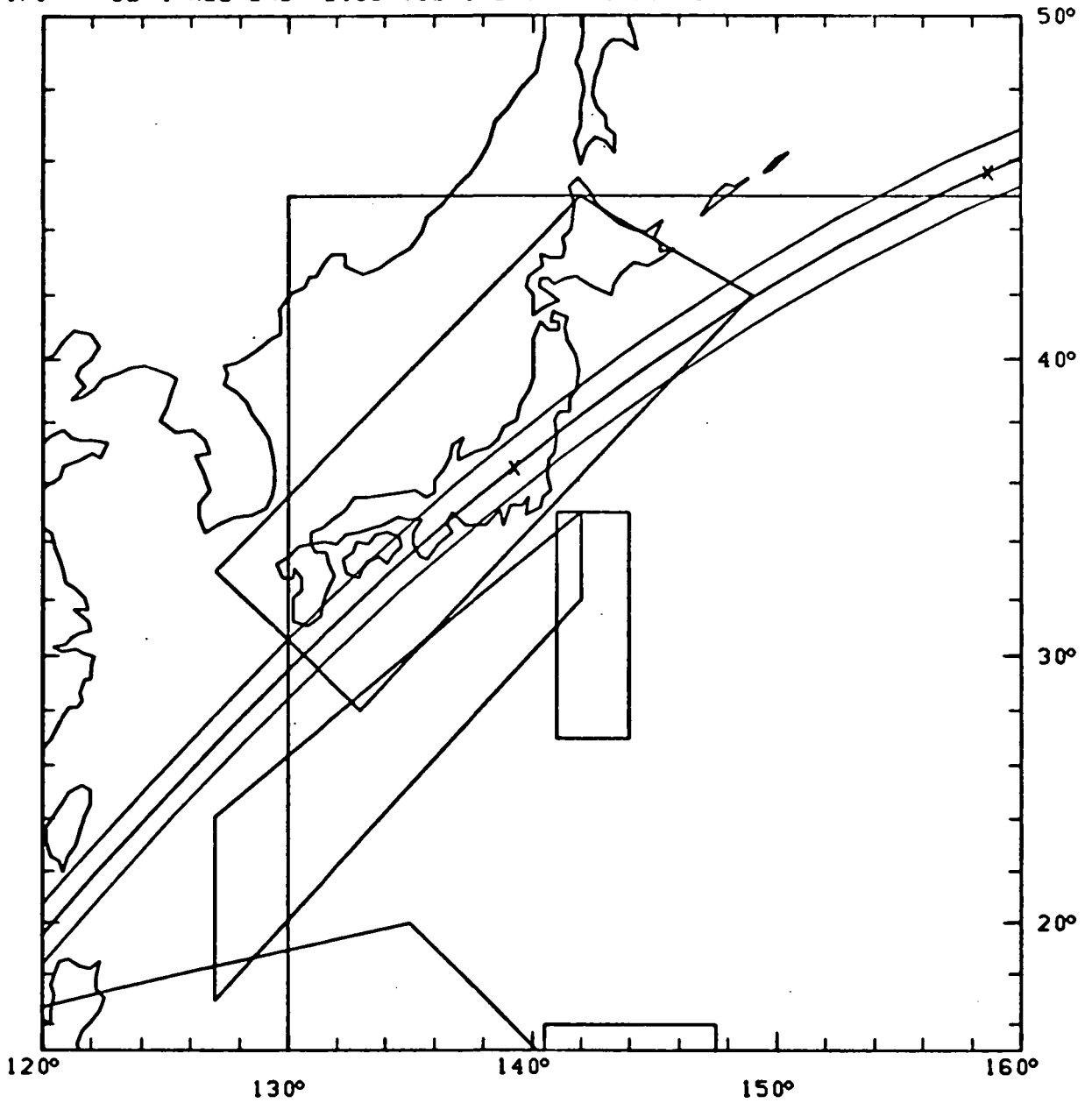
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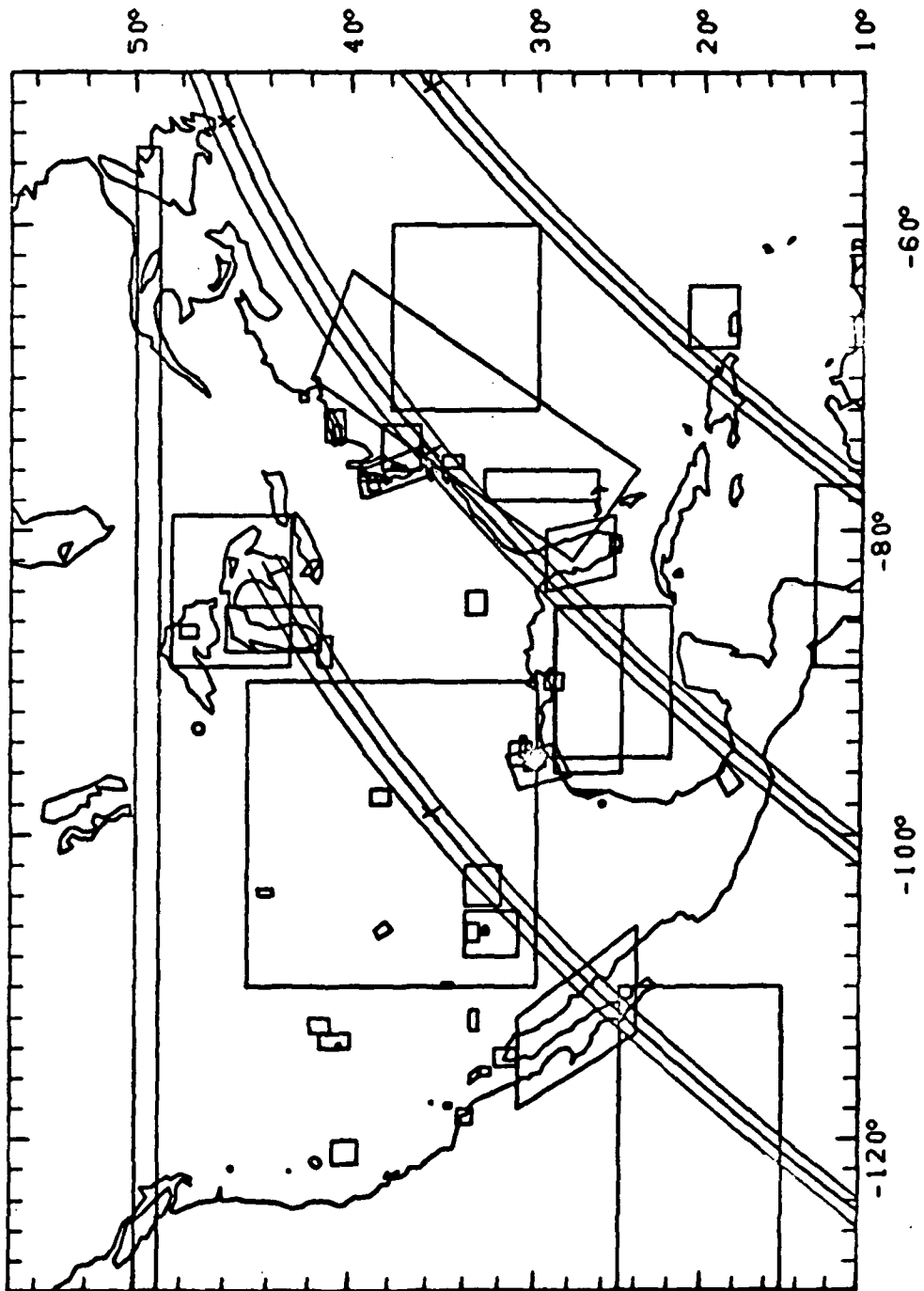
REV 3467-68 SL-4 ALL EREP DISC (SL-1 LAUNCH 4/30/73)



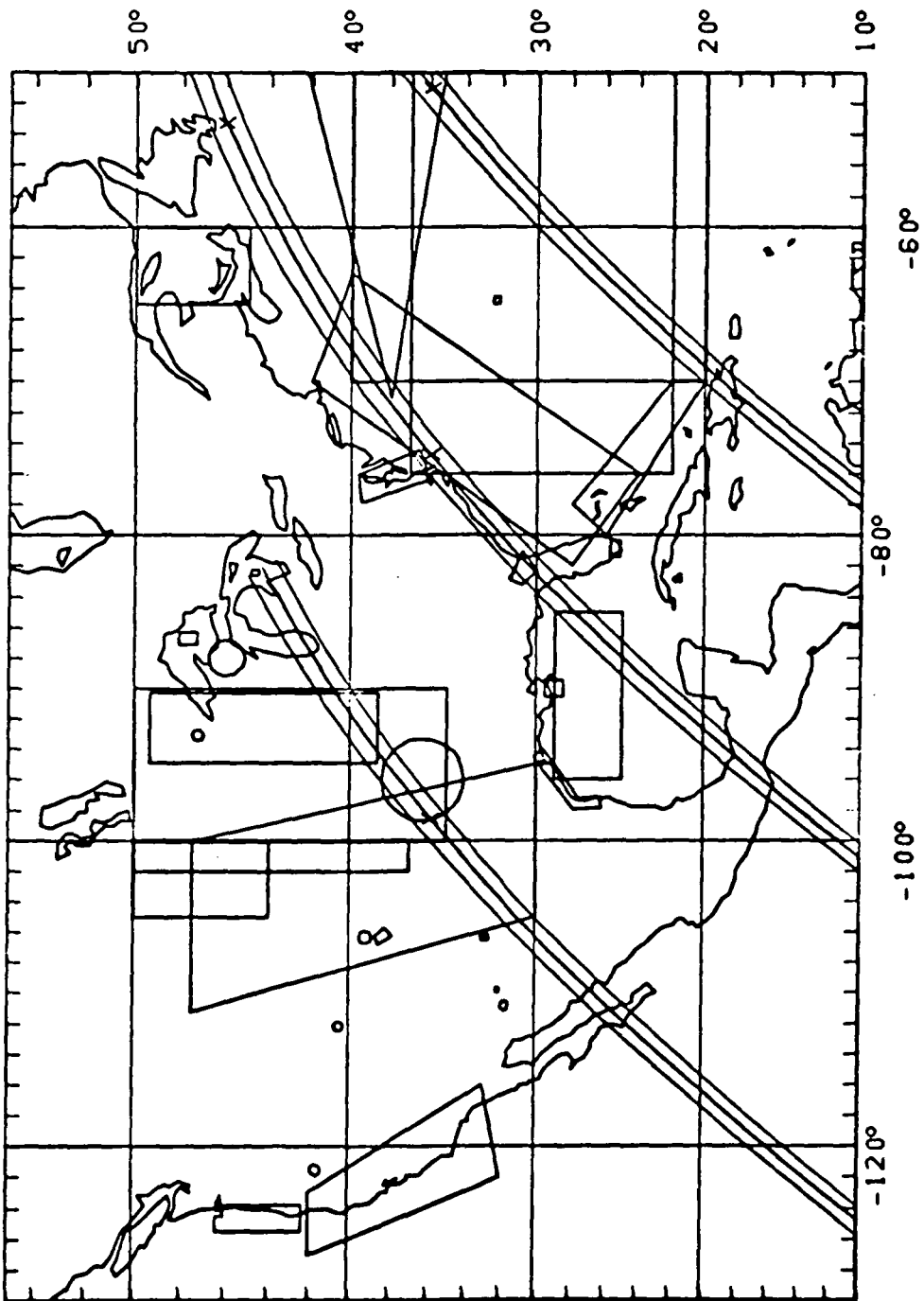
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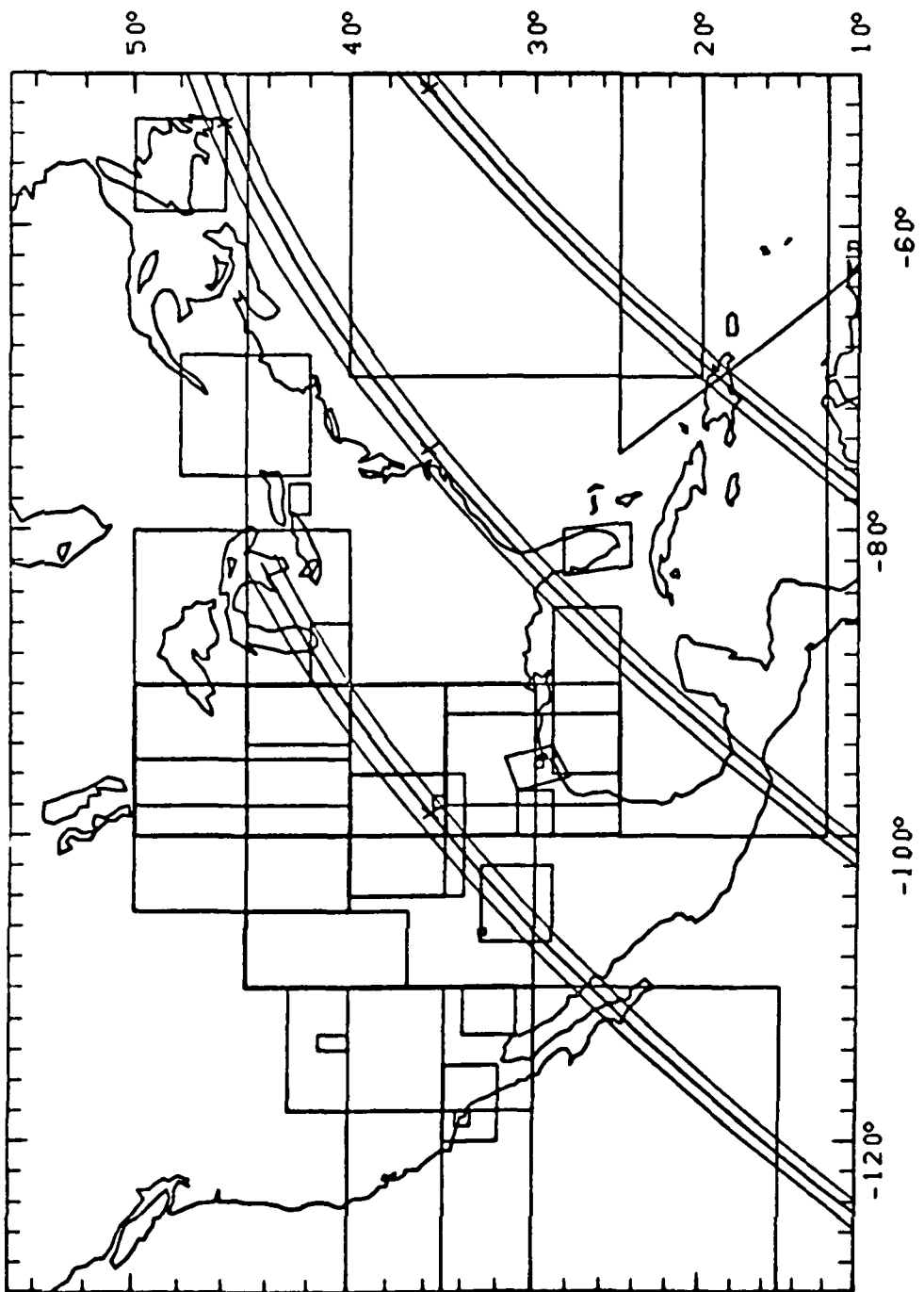
REV 3478-79 SL-4 EREP E.F (SL-I LAUNCH 4/30/73)



REV 3478-79 SL-4 EREP H.G.O (SL-1 LAUNCH 4/30/73)



REV 3478-79 SL-4 EREP L.P.W (SL-1 LAUNCH 4/30/73)



REFERENCES

1. Lunde, Alfred N.: Skylab-4 Preliminary Reference Earth Resources Experiment Package Pass Planning Document, Volume I - Groundtracks. MSC IN 71-FM-210, to be published.
2. Zarcaro, John G.; and Kranz, Eugene F.: Establishment of Joint FOD/SAD Skylab Support Teams. MSC memo TD 5, Mar. 9, 1971.
3. Baron, G.; and Sutton, D.: EREP Test Sites. Interdepartmental Communication 650-132, Apr. 16, 1971.
4. Lunde, Alfred N.: Graphic Display of Earth Resources Experiment Package Sites and Groundtracks for the SL-2 Mission. MSC IN 71-FM-122, Apr. 1, 1971.
5. Bennett, William J.: Revolution Numbers for Significant Skylab Events, MSC memo FM13(71-190), May 24, 1971.